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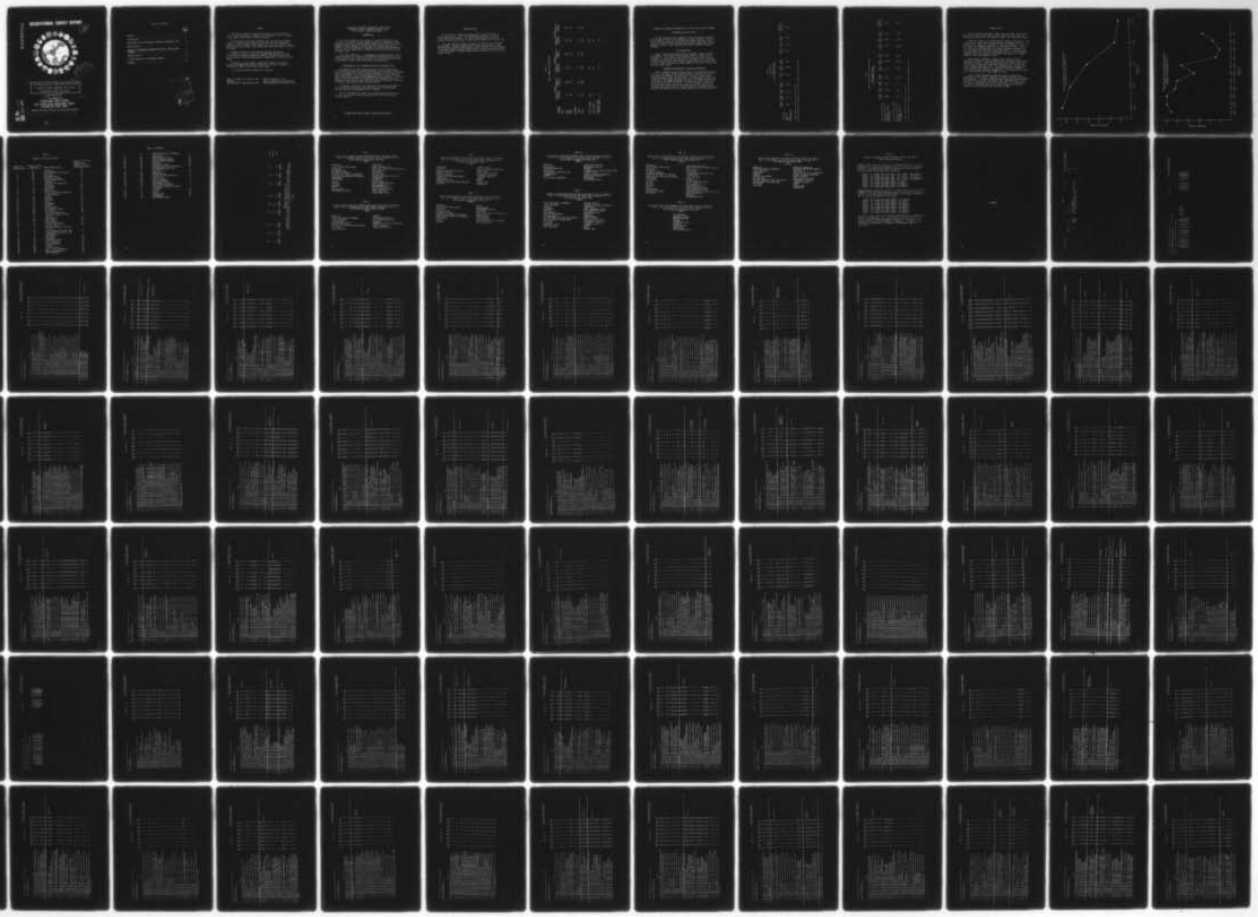

# OCCUPATIONAL SURVEY REPORT





ELECTRONICS PRINCIPLES OCCUPATIONAL SURVEY REPORT
INTEGRATED AVIONICS COMPONENT CAREER LADDER
AFSCS 326X1C, 326X1D, AND 326X1E.

AFPT-90-326-222

27 DECEMBER 1976

OCCUPATIONAL SURVEY BRANCH
USAF OCCUPATIONAL MEASUREMENT CENTER
LACKLAND AFB TEXAS 78236



Rept. for 1 May - 31 Aug 76.

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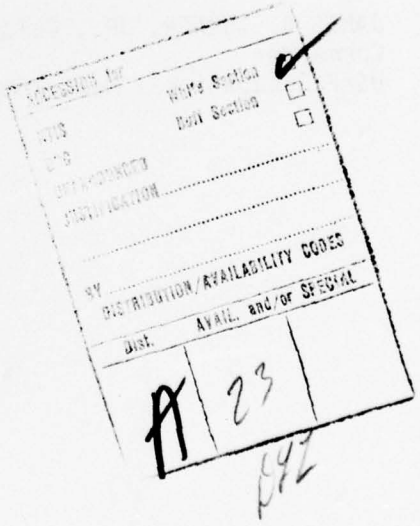

# PREFACE

This report presents a summary of the results of a detailed Air Force Electronics Principles survey of the Integrated Avionics Component career ladder, AFSCs 326X1C, 326X1D, and 326X1E.

The Electronics Principles Inventory (EPI) was developed by Major Thomas J. O'Connor and Mr. Hendrick W. Ruck and the survey data were analyzed by Major O'Connor and Mr. Guy B. Cole. All are members of the Occupational Survey Branch, USAF Occupational Measurement Center, Lackland AFB, Texas.

Computer programs for analyzing the data were designed by Dr. Raymond E. Christal, Occupational and Manpower Research Division, Air Force Human Resources Laboratory (AFHRL), and were written by the Project Analysis and Programming Branch, Computational Sciences Division, AFHRL.

Distribution of this report is made upon request to the USAF Occupational Measurement Center, attention of the Chief, Occupational Survey Branch (OMY), Lackland AFB, Texas 78236.

This report has been reviewed and is approved.

JAMES A. TURNER, JR., Colonel, USAF
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ELECTRONICS PRINCIPLES OCCUPATIONAL SURVEY REPORT
INTEGRATED AVIONICS COMPONENT CAREER LADDER
AFSCs 326X1C, 326X1D, AND 326X1E

## INTRODUCTION

This report summarizes the results of the administration of the Electronics Principles survey to airmen assigned to Integrated Avionics Component specialties including 326X1C, Manual Avionics AGE Test Station Operator; 326X1D, Automatic Avionics AGE Test Station Operator; and 326X1E, Avionics AGE Operator of Internal and External Penetration Aids. The data for this report were collected during the period 1 May through 30 August, 1976.

This report describes: (1) development and administration of the survey instrument; (2) summaries of background information which reflect the population of the survey sample; and (3) electronics principles used by personnel at various points in their career progression.

## DEVELOPMENT OF THE ELECTRONICS PRINCIPLES INVENTORY (EPI)

Development of the EPI involved personnel from the Occupational Survey Branch working on the project who were well qualified in theoretical physics and electronics as well as having expertise in task analysis and survey development. Over 300 maintenance personnel from SAC, TAC, ADC, MAC, and AFCS participated in the development of the inventory. Electronics experts from the five ATC training centers, who averaged 12 years of maintenance experience and four years of electronics principles instruction experience, spent several weeks refining the EPI.

In addition, personnel at the Electrical Engineering Department of the USAF Academy and the Air Force Human Resources Laboratory were consulted during the development of the inventory.

The EPI contained 1,257 items in 62 subject matter areas covering all electronics principles training given at the five ATC technical training centers.

## ADMINISTRATION

The Electronics Principles Inventory (EPI) was administered in person and by mail to 1,097 airmen worldwide assigned to all shreds of the 326XX career ladders. This total represents approximately 31 percent of the airmen assigned to these career ladders, as of 30 June 1976.

This report mainly presents the results of the data from the 326X1 career ladder. Two other separate reports have been written to cover the 326X0 and the 326X2 career ladders. Table 1 reflects the distribution of assigned personnel and percentage sampled in each of the three shreds of the 326X1 ladder. Responses were received from over 20 percent of each shred of 326X1.

TABLE 1

326X1 COMMAND REPRESENTATION

| COMMAND | 326X1C PERCENT OF ASSIGNED | 326X1C PERCENT OF SAMPLE | 326X1D PERCENT OF ASSIGNED | 326X1D PERCENT OF SAMPLE | 326X1E PERCENT OF ASSIGNED | 326X1E PERCENT OF SAMPLE |
|---|---|---|---|---|---|---|
| CONUS | | | | | | |
| ATC | 8 | 16 | 8 | 10 | 8 | 16 |
| SAC | 12 | 20 | 13 | 20 | 16 | 14 |
| AFSC | 1 | 1 | 1 | - | - | - |
| TAC | 68 | 50 | 71 | 62 | 69 | 63 |
| OVERSEAS | | | | | | |
| USAFE | 11 | 13 | 7 | 8 | 7 | 7 |
| TOTAL | 100% | 100% | 100% | 100% | 100% | 100% |
| TOTAL ASSIGNED | 290 | | 738 | | 258 | |
| TOTAL SAMPLE | 70 | | 147 | | 87 | |
| PERCENT OF TOTAL ASSIGNED SAMPLED | 24% | | 20% | | 34% | |

## SUMMARY OF BACKGROUND INFORMATION FOR 326X1 CAREER LADDER PERSONNEL

### Assignment to Career Ladder

Over 60 percent of the respondents in each shred were assigned to their present specialty after completing resident technical training. Of the remainder, most were retrained from another specialty, with a few being reclassified or converted from another career ladder without technical training. None reported direct duty assignment from basic training.

### Job Satisfaction

Table 2 compares Integrated Avionics Component (326X1) personnel with members in the 326X0 and 326X2 career ladders in terms of job satisfaction. Also shown is data reflecting the job satisfaction of incumbents in other Air Force specialties surveyed in 1975. Personnel in the D shred of 326X1, the A shred of 326X0, and the C shred of 326X2 find their jobs less interesting than members of the other shreds within the same career ladder.

### Perceived Utilization of Talents and Training

Table 3 presents the perceived utilization of talents and training factors for the 326X1 shreds, the 326X0 shreds, and the 326X2 shreds. For comparison purposes, the average results from 35 other career ladders surveyed in 1975 are also given. The survey data reflect that 42 percent of the 326X0A personnel, 45 percent of 326X1D personnel, and 41 percent of the 326X2C personnel felt that their training was being utilized very little or not at all. A similar pattern is noted for these same AFSCs when comparing how their job utilizes their talents. A highly significant finding is that 63 percent of the 326X2C personnel perceive that their job utilizes their talents very little or not at all.

TABLE 2

JOB SATISFACTION

TOTAL SAMPLE BY SHRED
(PERCENT MEMBERS RESPONDING)

| I FIND MY JOB: | 326X0A (N=36) | 326X0B (N=70) | 326X0C* (N=3) | 326X0D (N=33) | 326X1C (N=70) | 326X1D (N=147) | 326X1E (N=87) | 326X2A (N=164) | 326X2B (N=146) | 326X2C (N=155) | OTHER AF SPECIALTIES (N=21,107) ** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERESTING | 59 | 80 | 67 | 70 | 74 | 54 | 71 | 59 | 57 | 35 | 69 |
| SO-SO | 22 | 7 | - | 9 | 10 | 23 | 18 | 21 | 20 | 26 | 15 |
| DULL | 19 | 13 | 33 | 18 | 16 | 23 | 11 | 19 | 21 | 39 | 16 |
| NOT RESPONDING | - | - | - | 3 | - | - | - | 1 | 2 | - | |

* Survey sample too limited for significant results

** Based on responses from incumbents in 35 other career ladders surveyed during 1975.

TABLE 3

PERCEIVED UTILIZATION OF TALENTS AND TRAINING

TOTAL SAMPLE BY SHRED
(PERCENT MEMBERS RESPONDING)

| | 326X0A (N=36) | 326X0B (N=70) | 326X0C* (N=3) | 326X0D (N=33) | 326X1C (N=70) | 326X1D (N=147) | 326X1E (N=87) | 326X2A (N=164) | 326X2B (N=146) | 326X2C (N=155) | OTHER AF SPECIALTIES (N=21,107) ** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MY JOB UTILIZES MY TALENTS: | | | | | | | | | | | |
| VERY LITTLE OR NOT AT ALL | 33 | 16 | 33 | 24 | 27 | 42 | 24 | 40 | 37 | 63 | 26 |
| FAIRLY WELL | 28 | 39 | - | 39 | 40 | 34 | 29 | 30 | 33 | 25 | 26 |
| QUITE WELL TO PERFECTLY | 39 | 45 | 67 | 37 | 33 | 22 | 46 | 30 | 29 | 12 | 48 |
| NOT RESPONDING | - | - | - | - | - | 2 | 1 | - | 1 | - | - |
| MY JOB UTILIZES MY TRAINING: | | | | | | | | | | | |
| VERY LITTLE OR NOT AT ALL | 42 | 16 | 33 | 30 | 33 | 45 | 25 | 25 | 27 | 41 | 26 |
| FAIRLY WELL | 17 | 33 | - | 33 | 33 | 33 | 33 | 38 | 38 | 39 | 26 |
| QUITE WELL TO PERFECTLY | 41 | 51 | 67 | 34 | 34 | 21 | 42 | 35 | 33 | 19 | 48 |
| NOT RESPONDING | - | - | - | 3 | - | 1 | - | 2 | 2 | 1 | - |

* Survey sample too limited for significant results

** Based on responses from incumbents in 35 other career ladders surveyed during 1975.

## GENERAL RESULTS

Figure 1 presents the overall results for the 326XX career ladders. Data for two other career ladders, 324X0 (PMEL) and 316X1L (Missile Maintenance Systems), are also shown on Figure 1 for comparison purposes.

There are a total of 1,257 electronics principles questions or items in the survey. 326X1 career ladder personnel responded "Yes" to an average of 255 items or to 20 percent of the total number of items. The 20 percent is an average figure for all the shreds of 326X1. Figure 1 also shows that 326X0 personnel (all shreds averaged) responded "Yes" to an average of 352 electronics principles items or to 28 percent of the total number of items, while 326X2 personnel (all shreds averaged) responded "Yes" to an average of 83 items in the survey or to seven percent of the total number of items.

These results, therefore, indicate a wide range of usage of electronics principles among the 326X0, 326X1, and 326X2 career ladders. In addition, Figure 1, shows how the 326XX career ladders compare in field utilization of basic electronics principles with the two other career ladders, 324X0 and 316X1L. AFS 324X0 personnel responded "Yes" to an average of 401 items or to 32 percent of the total number of items, while 316X1L personnel responded "Yes" to an average of 58 items or to five percent of the total number of items.

Figure 2 shows the percent field utilization of electronics principles for all shreds of 326XX and for 32692 (Integrated Avionics Superintendent). As shown, 326X0B and 326X0C personnel have the highest utilization of electronics principles, while 326X2C personnel show the lowest utilization of electronics principles. It is interesting to note that 32692 personnel show a higher percent utilization of electronics principles than does any shred of 326X2.

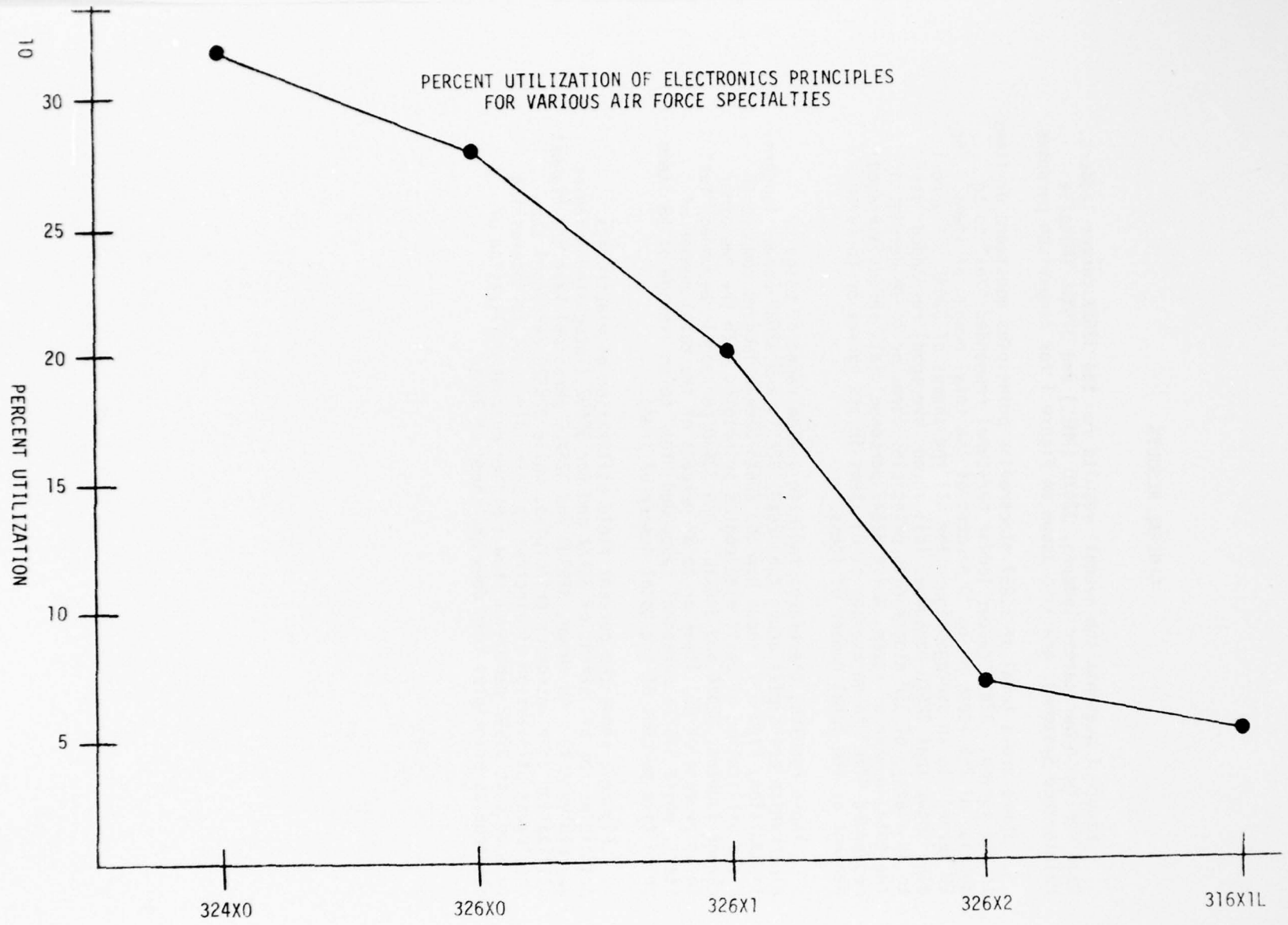
PERCENT UTILIZATION OF ELECTRONICS PRINCIPLES
FOR VARIOUS AIR FORCE SPECIALTIES
10
30
25
20
15
10
5
PERCENT UTILIZATION
324X0
326X0
326X1
326X2
316X1L
SPECIALTIES

FIGURE 1

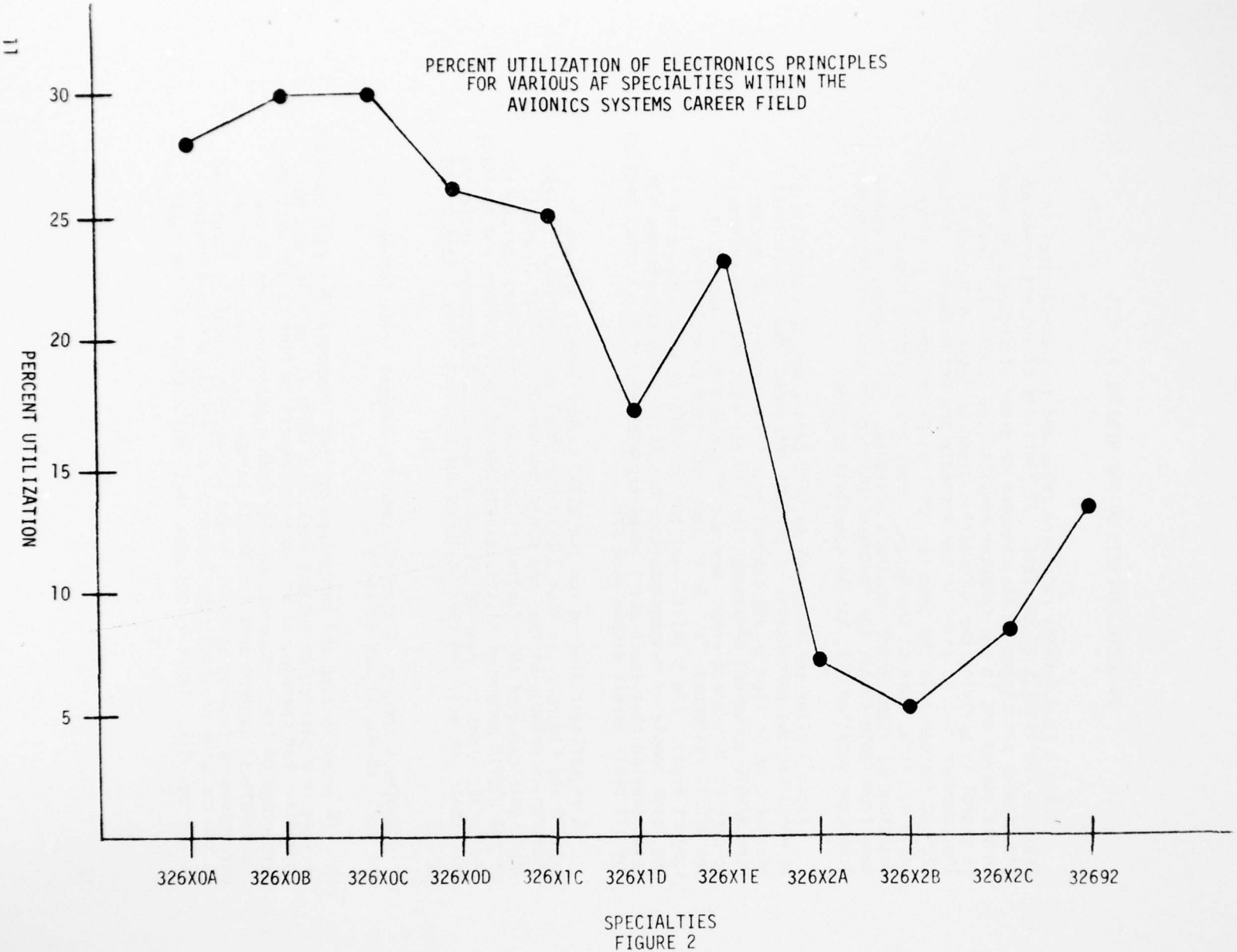
PERCENT UTILIZATION OF ELECTRONICS PRINCIPLES
FOR VARIOUS AF SPECIALTIES WITHIN THE
AVIONICS SYSTEMS CAREER FIELD
PERCENT UTILIZATION
30
25
20
15
10
5
326X0A
326X0B
326X0C
326X0D
326X1C
326X1D
326X1E
326X2A
326X2B
326X2C
32692
SPECIALTIES

FIGURE 2

## IN DEPTH ANALYSIS OF THE GENERAL RESULTS

Table 4 is a general reference table and is a useful tool in applying the results of the data. It lists the 62 subject areas of electronics principles in the sequence or order of presentation both in the survey and in the computer results (the Appendix). Table 4 is useful in applying the information given in Tables 6 through 14. The computer results given in the Appendix are not numbered 1 through 62, but instead have the computer notation A1 through U2, as given in Table 4. Also, each of the subject areas has a certain number of questions or items which require a response. For example, it can be seen from Table 4 that the "Mathematics" subject area, subject number 1 (computer notation A1), has 14 questions or items.

Table 5 gives the number of subject areas, out of a possible 62, in which various percentages of persons responded "Yes" to at least one question or item in any subject area. For example, 50 percent or more 32651C personnel responded "Yes" to at least one item or question in each of 30 subject areas, whereas 30 percent to 49 percent of the 32651C responded "Yes" to at least one item in each of 14 subject areas. The 5-skill level for each AFS is used because of the large sample of respondents for that skill level and because the data revealed that the 5-skill level represented a typical cross-section for all skill levels within each AFS.

A significant finding for the 326X1 career ladder, derived from Table 5 and Figure 2, is that 326X1D personnel use significantly less electronics principles than the other two shreds of 326X1 (C and E). The significance of this finding is enhanced by the general perception of the 326X1D personnel of the utilization of their talents and training (Table 3). That is, over 40 percent of the 316X1D personnel indicated that their job utilized their talents and training "very little or not at all".

Tables 6 through 14 give the specific subject areas for each of the 32651 shreds listed in Table 5.

In order to find the percentage of "Yes" responses for each question or item in a particular subject area, use Table 4, Table 15, and the Appendix. For example, if one were interested in finding out what the percentage of "Yes" responses was for each question or item in the "Mathematics" subject area for 32651C personnel, the answer can be determined by looking at Table 15 and seeing that 32651C is identified in the computer printout (the Appendix) as SPC028, a column heading in the Appendix. Table 4 indicates that "Mathematics" is the first

subject area and has the computer printout (the Appendix) designation of A1. Thus, on page 4 of the Appendix, items 1 through 14 (designated as A1-01 through A1-14) are read under the column designated as SPC028. It can be seen from page 4 that 8 percent of the sample of 32651C indicated that they have to "Find the Square Root of a Quantity" (item A1-04).

Large patterns of "Yes" responses can be immediately determined by scanning through the Appendix. For example, page 4 of the Appendix shows a high pattern of "Yes" responses for all groups (SPC022 through SPC029) for items 24 through 29 or computer notation A3-01 through A3-06; whereas, for items 6 through 13 (A1-06 through A1-13), the pattern of "Yes" responses is low.

TABLE 4

Summary of EPI Subject Areas

| Sequence of Subject Areas | Computer Printout Notation | Subject Area Title | Number of Possible Responses or Number of Items in each Subject Area |
|---|---|---|---|
| 1 | A1 | Mathematics | 14 |
| 2 | A2 | Direct Current and Voltage | 9 |
| 3 | A3 | Resistance | 28 |
| 4 | B1 | Multimeter Uses | 9 |
| 5 | B2 | *Alternating Current* | 6 |
| 6 | B3 | Inductors and Inductive Reactance | 25 |
| 7 | C1 | Capacitors and Capacitive Reactance | 36 |
| 8 | C2 | Transformers | 43 |
| 9 | C3 | Magnetism | 14 |
| 10 | D1 | RCL Circuits | 44 |
| 11 | D2 | Series and Parallel Resonance (Time Constants) | 10 |
| 12 | D3 | Filters | 22 |
| 13 | E1 | Coupling | 12 |
| 14 | E2 | Soldering | 22 |
| 15 | E3 | Relays | 19 |
| 16 | F1 | Microphones | 13 |
| 17 | F2 | Speakers | 15 |
| 18 | F3 | Oscilloscopes | 12 |
| 19 | G1 | Semiconductor Diodes | 50 |
| 20 | G2 | Transistors | 24 |
| 21 | G3 | Transistor Amplifiers | 49 |
| 22 | H1 | Solid-State Special Purpose Devices | 6 |
| 23 | H2 | Power Supplies | 29 |
| 24 | H3 | Oscillators | 27 |
| 25 | I1 | Multivibrators | 16 |
| 26 | I2 | Limiters and Clampers | 10 |
| 27 | I3 | Electron Tubes | 44 |
| 28 | J1 | Electron Tube Amplifiers and Circuits | 7 |
| 29 | J2 | Special Purpose Electron Tubes | 16 |
| 30 | J3 | Heterodyning, Modulation, and Demodulation | 6 |
| 31 | K1 | AM Systems | 28 |
| 32 | K2 | FM Systems | 19 |
| 33 | K3 | *Numbering Systems* | 10 |
| 34 | L1 | Logic Functions | 13 |
| 35 | L2 | Boolean Equations | 25 |
| 36 | L3 | Counters | 24 |
| 37 | M1 | Timing Circuits | 12 |
| 38 | M2 | Use of Signal Generators | 10 |
| 39 | M3 | Motors and Generators | 29 |
| 40 | N1 | Meter Movements | 10 |

TABLE 4 (CONTINUED)

| | | | |
|---|---|---|---|
| 41 | N2 | Saturable Reactors and Magnetic Amplifiers | 16 |
| 42 | N3 | Waveshaping Circuits | 11 |
| 43 | O1 | Single Sideband Systems | 30 |
| 44 | O2 | Pulse Modulation Systems | 39 |
| 45 | O3 | Antennas | 39 |
| 46 | P1 | Transmission Lines | 31 |
| 47 | P2 | Waveguides and Cavity Resonators | 50 |
| 48 | P3 | Microwave Amplifiers and Oscillators | 76 |
| 49 | Q1 | Registers | 7 |
| 50 | Q2 | Storage Devices | 9 |
| 51 | Q3 | Digital to Analog Converters | 14 |
| 52 | R1 | Phantastrons | 1 |
| 53 | R2 | Schmitt Triggers | 3 |
| 54 | R3 | Cable Fabrication | 2 |
| 55 | S1 | Input/Output Devices | 3 |
| 56 | S2 | Photo Sensitive Devices | 1 |
| 57 | S3 | Synchronous Vibrations (Chopper Circuits) | 9 |
| 58 | T1 | Infrared | 27 |
| 59 | T2 | Lasers | 34 |
| 60 | T3 | Display Tubes | 14 |
| 61 | U1 | Programming | 21 |
| 62 | U2 | DB and Power Ratios | 3 |

TABLE 5

NUMBER OF SUBJECT AREAS, OUT OF A POSSIBLE 62, IN WHICH A SPECIFIED PERCENT OF PERSONS IN EACH AFSC (50% OR MORE, 30 TO 49%, OR 0 TO 29%) MARKED AT LEAST ONE "YES" RESPONSE.

| | 32650A | 32650B | 32650D | 32651C | 32651D | 32651E | 32652A | 32652B | 32652C |
|---|---|---|---|---|---|---|---|---|---|
| 50%+ | 36 | 39 | 34 | 30 | 20 | 33 | 9 | 8 | 15 |
| 30-49% | 7 | 6 | 6 | 14 | 16 | 9 | 7 | 6 | 4 |
| 0-29% | 19 | 17 | 22 | 18 | 26 | 20 | 46 | 48 | 43 |

TABLE 6

THIRTY SUBJECT AREAS WITH HIGH JOB UTILIZATION OF BASIC ELECTRONICS. THAT IS, 50 PERCENT OR MORE OF THE SURVEY SAMPLE RESPONDED "YES" TO ONE OR MORE QUESTIONS WITHIN EACH AREA.
32651C

MATHEMATICS
DIRECT CURRENT AND VOLTAGE
RESISTANCE
MULTIMETER USES
ALTERNATING CURRENT
INDUCTORS AND INDUCTIVE REACTANCE
CAPACITORS AND CAPACITIVE REACTANCE
TRANSFORMERS
RCL CIRCUITS
FILTERS
COUPLING
SOLDERING
RELAYS
OSCILLOSCOPES
SEMICONDUCTOR DIODES
TRANSISTORS
TRANSISTOR AMPLIFIERS
SOLID-STATE SPECIAL PURPOSE DEVICES
POWER SUPPLIES
OSCILLATORS
ELECTRON TUBES
HETERODYNING, MODULATION, AND DEMODULATION
AM SYSTEMS
TIMING CIRCUITS
USE OF SIGNAL GENERATORS
METER MOVEMENTS
WAVESHAPING CIRCUITS
SINGLE SIDEBAND SYSTEMS
CABLE FABRICATION
DB AND POWER RATIOS

TABLE 7

FOURTEEN SUBJECT AREAS WITH MODERATE JOB UTILIZATION OF BASIC ELECTRONICS. THAT IS, 30 TO 49 PERCENT OF THE SURVEY SAMPLE RESPONDED "YES" TO ONE OR MORE QUESTIONS WITHIN EACH AREA.
32651C

MAGNETISM
SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)
MULTIVIBRATORS
LIMITERS AND CLAMPERS
ELECTRON TUBE AMPLIFIERS AND CIRCUITS
FM SYSTEMS
LOGIC FUNCTIONS
COUNTERS
MOTORS AND GENERATORS
PULSE MODULATION SYSTEMS
ANTENNAS
WAVEGUIDES AND CAVITY RESONATORS
SCHMITT TRIGGERS
INPUT-OUTPUT DEVICES

TABLE 8

EIGHTEEN SUBJECT AREAS WITH LOW JOB UTILIZATION OF BASIC ELECTRONICS. THAT IS, 29 PERCENT OR LESS OF THE SURVEY SAMPLE RESPONDED "YES" TO ANY QUESTION WITHIN EACH AREA.
32651C

MICROPHONES
SPEAKERS
SPECIAL PURPOSE ELECTRON TUBES
NUMBERING SYSTEMS
BOOLEAN EQUATIONS
SATURABLE REACTORS AND MAGNETIC AMPLIFIERS
TRANSMISSION LINES
MICROWAVE AMPLIFIERS AND OSCILLATORS
REGISTERS
STORAGE DEVICES
DIGITAL TO ANALOG CONVERTERS
PHANTASTRONS
PHOTO SENSITIVE DEVICES
SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)
INFRARED
LASERS
DISPLAY TUBES
PROGRAMMING

TABLE 9

TWENTY SUBJECT AREAS WITH HIGH JOB UTILIZATION OF BASIC ELECTRONICS. THAT IS, 50 PERCENT OR MORE OF THE SURVEY SAMPLE RESPONDED "YES" TO ONE OR MORE QUESTIONS WITHIN EACH AREA.
32651D

MATHEMATICS
DIRECT CURRENT AND VOLTAGE
RESISTANCE
MULTIMETER USES
ALTERNATING CURRENT
INDUCTORS AND INDUCTIVE REACTANCE
CAPACITORS AND CAPACITIVE REACTANCE
TRANSFORMERS
FILTERS
SOLDERING
RELAYS
OSCILLOSCOPES
SEMICONDUCTOR DIODES
TRANSISTORS
SOLID-STATE SPECIAL PURPOSE DEVICES
POWER SUPPLIES
TIMING CIRCUITS
METER MOVEMENTS
WAVEGUIDES AND CAVITY RESONATORS
CABLE FABRICATION

TABLE 10

SIXTEEN SUBJECT AREAS WITH MODERATE JOB UTILIZATION OF BASIC ELECTRONICS. THAT IS, 30 TO 49 PERCENT OF THE SURVEY SAMPLE RESPONDED "YES" TO ONE OR MORE QUESTIONS WITHIN EACH AREA.
32651D

MAGNETISM
RCL CIRCUITS
TRANSISTOR AMPLIFIERS
OSCILLATORS
HETERODYNING, MODULATION, AND DEMODULATION
COUNTERS
USE OF SIGNAL GENERATORS
MOTORS AND GENERATORS
WAVESHAPING CIRCUITS
ANTENNAS
MICROWAVE AMPLIFIERS AND OSCILLATORS
STORAGE DEVICES
DIGITAL TO ANALOG CONVERTERS
INPUT-OUTPUT DEVICES
PROGRAMMING
DB AND POWER RATIOS

TABLE 11

TWENTY-SIX SUBJECT AREAS WITH LOW JOB UTILIZATION OF BASIC ELECTRONICS. THAT IS, 29 PERCENT OR LESS OF THE SURVEY SAMPLE RESPONDED "YES" TO ANY QUESTION WITHIN EACH AREA.
32651D

SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)
COUPLING
MICROPHONES
SPEAKERS
MULTIVIBRATORS
LIMITERS AND CLAMPERS
ELECTRON TUBES
ELECTRON TUBE AMPLIFIERS AND CIRCUITS
SPECIAL PURPOSE ELECTRON TUBES
AM SYSTEMS
FM SYSTEMS
NUMBERING SYSTEMS
LOGIC FUNCTIONS
BOOLEAN EQUATIONS
SATURABLE REACTORS AND MAGNETIC AMPLIFIERS
SINGLE SIDEBAND SYSTEMS
PULSE MODULATION SYSTEMS
TRANSMISSION LINES
REGISTERS
PHANTASTRONS
SCHMITT TRIGGERS
PHOTO SENSITIVE DEVICES
SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)
INFRARED
LASERS
DISPLAY TUBES

TABLE 12

THIRTY-THREE SUBJECT AREAS WITH HIGH JOB UTILIZATION OF BASIC ELECTRONICS. THAT IS, 50 PERCENT OR MORE OF THE SURVEY SAMPLE RESPONDED "YES" TO ONE OR MORE QUESTIONS WITHIN EACH AREA.

32651E

MATHEMATICS
DIRECT CURRENT AND VOLTAGE
RESISTANCE
MULTIMETER USES
ALTERNATING CURRENT
INDUCTORS AND INDUCTIVE REACTANCE
CAPACITORS AND CAPACITIVE REACTANCE
TRANSFORMERS
RCL CIRCUITS
FILTERS
COUPLING
SOLDERING
RELAYS
OSCILLOSCOPES
SEMICONDUCTOR DIODES
TRANSISTORS
TRANSISTOR AMPLIFIERS
SOLID-STATE SPECIAL PURPOSE DEVICES
POWER SUPPLIES
OSCILLATORS
HETERODYNING, MODULATION, AND DEMODULATION
LOGIC FUNCTIONS
COUNTERS
TIMING CIRCUITS
USE OF SIGNAL GENERATORS
METER MOVEMENTS
WAVESHAPING CIRCUITS
SINGLE SIDEBAND SYSTEMS
PULSE MODULATION SYSTEMS
MICROWAVE AMPLIFIERS AND OSCILLATORS
CABLE FABRICATION
INFRARED
DB AND POWER RATIOS

TABLE 13

NINE SUBJECT AREAS WITH MODERATE JOB UTILIZATION OF BASIC ELECTRONICS. THAT IS, 30 TO 49 PERCENT OF THE SURVEY SAMPLE RESPONDED "YES" TO ONE OR MORE QUESTIONS WITHIN EACH AREA.

32651E

MULTIVIBRATORS
NUMBERING SYSTEMS
BOOLEAN EQUATIONS
ANTENNAS
TRANSMISSION LINES
REGISTERS
STORAGE DEVICES
PHANTASTRONS
INPUT-OUTPUT DEVICES

TABLE 14

TWENTY SUBJECT AREAS WITH LOW JOB UTILIZATION OF BASIC ELECTRONICS. THAT IS, 29 PERCENT OR LESS OF THE SURVEY SAMPLE RESPONDED "YES" TO ANY QUESTION WITHIN EACH AREA.

32651E

MAGNETISM
SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)
MICROPHONES
SPEAKERS
LIMITERS AND CLAMPERS
ELECTRON TUBES
ELECTRON TUBE AMPLIFIERS AND CIRCUITS
SPECIAL PURPOSE ELECTRON TUBES
AM SYSTEMS
FM SYSTEMS
MOTORS AND GENERATORS
SATURABLE REACTORS AND MAGNETIC AMPLIFIERS
WAVEGUIDES AND CAVITY RESONATORS
DIGITAL TO ANALOG CONVERTERS
SCHMITT TRIGGERS
PHOTO SENSITIVE DEVICES
SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)
LASERS
DISPLAY TUBES
PROGRAMMING

TABLE 15

READING THE COMPUTER PRINTOUTS (GPSM2A, GPSM2B, AND JOBINV)
WHICH ARE IN THE APPENDIX

GPSM2A (Appendix page 4 to page 46) is a summary which gives the percent of members of a group which responded "Yes" to the items in the survey booklet. At the top of each column of numbers on any page of GPSM2A are the following Group Identifiers and Groups:

SPC022 - All airmen with DAFSC 326X1 (All shreds) (416 members)
SPC023 - All airmen with DAFSC 32631 (All shreds) (63 members)
SPC024 - All airmen with DAFSC 32651 (All shreds) (247 members)
SPC025 - All airmen with DAFSC 32671 (All shreds) (106 members)
SPC026 - All airmen with DAFSC 326X1C (70 members)
SPC027 - All airmen with DAFSC 32631C (2 members)
SPC028 - All airmen with DAFSC 32651C (49 members)
SPC029 - All airmen with DAFSC 32671C (19 members)

GPSM2B (Appendix page 49 to page 91) is a summary which gives the percent of members of a group which responded "Yes" to the items in the survey booklet. At the top of each column of numbers on any page of GPSM2B are the following Group Identifiers and Groups:

SPC030 - All airmen with DAFSC 326X1D (147 members)
SPC031 - All airmen with DAFSC 32631D (26 members)
SPC032 - All airmen with DAFSC 32651D (83 members)
SPC033 - All airmen with DAFSC 32671D (38 members)
SPC034 - All airmen with DAFSC 326X1E (87 members)
SPC035 - All airmen with DAFSC 32631E (13 members)
SPC036 - All airmen with DAFSC 32651E (51 members)
SPC037 - All airmen with DAFSC 32671E (23 members)

To conserve space, some of the items have been abbreviated in GPSM2A and GPSM2B in the Appendix. Each item has been listed in its entirety in the Job Inventory (JOBINV) beginning on page 92 of the Appendix. For example, Task A1-01, page 4, GPSM2A, is incomplete. In order to find the complete statement, turn to page 92 of the Appendix and read item A1-01.

# APPENDIX

APPENDIX

TABLE OF CONTENTS



AF HUMAN RESOURCES LABORATORY
AIR FORCE SYSTEMS COMMAND



10
30
2
2
PERCENT UTILIZATION

PERCENT MEMBERS ANSWERING 'YES' TO EPI ITEMS BY DAFSC GROUPS IN THE 326X1 CAREER LADDER.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

| | | | | |
|---|---|---|---|---|
| GROUP IDENTITY = | SPC022 | ALL AMN 326X1 (ALL SHREDS) | CONTAINING | 416 MEMBERS. |
| GROUP IDENTITY = | SPC023 | ALL AMN 32631 (ALL SHREDS) | CONTAINING | 63 MEMBERS. |
| GROUP IDENTITY = | SPC024 | ALL AMN 32651 (ALL SHREDS) | CONTAINING | 247 MEMBERS. |
| GROUP IDENTITY = | SPC025 | ALL AMN 32671 (ALL SHREDS) | CONTAINING | 106 MEMBERS. |
| GROUP IDENTITY = | SPC026 | ALL AMN 326X1C | CONTAINING | 70 MEMBERS. |
| GROUP IDENTITY = | SPC027 | ALL AMN 32631C | CONTAINING | 2 MEMBERS. |
| GROUP IDENTITY = | SPC028 | ALL AMN 32651C | CONTAINING | 49 MEMBERS. |
| GROUP IDENTITY = | SPC029 | ALL AMN 32671C | CONTAINING | 19 MEMBERS. |

DUTY GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DUTY | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 |
|---|---|---|---|---|---|---|---|---|---|
| A | MATHEMATICS, DIRECT CURRENT, VOLTAGE, AND RESISTANCE | 100 | 100 | 100 | 98 | 100 | 100 | 100 | 100 |
| B | MULTIMETER USES, ALTERNATING CURRENT, INDUCTORS, AND INDUCTIVE | 99 | 100 | 100 | 95 | 97 | 100 | 100 | 89 |
| C | CAPACITORS, CAPACITIVE REACTANCE, TRANSFORMERS, AND MAGNETISM | 87 | 83 | 88 | 88 | 89 | 100 | 90 | 84 |
| D | RCL CIRCUITS, SERIES AND PARALLEL RESONANCE (TIME CONSTANTS), AND FILTERS | 71 | 67 | 72 | 72 | 80 | 100 | 82 | 74 |
| E | COUPLING, SOLDERING, AND RELAYS | 94 | 95 | 95 | 92 | 96 | 100 | 96 | 95 |
| F | MICROPHONES, SPEAKERS, AND OSCILLOSCOPES | 95 | 95 | 96 | 92 | 93 | 100 | 94 | 89 |
| G | SEMICONDUCTOR DIODES, TRANSISTORS, AND TRANSISTOR AMPLIFIERS | 81 | 83 | 80 | 82 | 89 | 100 | 90 | 84 |
| H | SOLID STATE SPECIAL PURPOSE DEVICES, POWER SUPPLIES, AND OSCILLATORS | 94 | 92 | 95 | 94 | 96 | 100 | 100 | 84 |
| I | MULTIVIBRATORS, LIMITERS, CLAMPERS, AND ELECTRON TUBES | 51 | 52 | 46 | 63 | 67 | 50 | 67 | 68 |
| J | ELECTRON TUBE AMPLIFIERS AND CIRCUITS, SPECIAL PURPOSE ELECTRON TUBES, HETERODYNING, MODULATION, | 70 | 75 | 69 | 68 | 87 | 100 | 94 | 68 |
| K | AM SYSTEMS, FM SYSTEMS, AND NUMBERING SYSTEMS | 55 | 44 | 53 | 65 | 80 | 50 | 84 | 74 |
| L | LOGIC FUNCTIONS, BOOLEAN EQUATIONS, AND COUNTERS | 56 | 49 | 53 | 65 | 54 | 100 | 47 | 68 |
| M | TIMING CIRCUITS, USE OF SIGNAL GENERATORS, MOTORS, AND GENERATORS | 87 | 83 | 89 | 83 | 94 | 100 | 96 | 89 |
| N | METER MOVEMENTS, SATURABLE REACTORS, MAGNETIC AMPLIFIERS, AND WAVESHAPING CIRCUITS | 87 | 90 | 87 | 83 | 90 | 100 | 96 | 74 |
| O | SINGLE SIDEBAND SYSTEMS, PULSE MODULATION SYSTEMS, AND ANTENNAS | 67 | 65 | 66 | 69 | 87 | 100 | 92 | 74 |
| P | TRANSMISSION LINES, WAVEGUIDES AND CAVITY RESONATORS, AND MICROWAVE AMPLIFIERS AND OSCILLATORS | 62 | 67 | 59 | 65 | 39 | 100 | 39 | 32 |
| Q | REGISTERS, STORAGE DEVICES, AND DIGITAL TO ANALOG CONVERTERS | 51 | 52 | 47 | 62 | 46 | 100 | 39 | 58 |
| R | PHANTASTRONS, SCHMITT TRIGGERS, AND CABLE FABRICATION | 63 | 52 | 64 | 67 | 69 | 50 | 71 | 63 |
| S | INPUT/OUTPUT DEVICES, PHOTO SENSITIVE DEVICES, AND SYNCHRONOUS VIBRATIONS | 55 | 59 | 53 | 57 | 40 | 0 | 43 | 37 |
| T | INFRARED, LASERS, AND DISPLAY TUBES | 35 | 43 | 31 | 41 | 4 | 0 | 6 | 0 |
| U | PROGRAMMING, DB AND POWER RATIOS | 71 | 71 | 71 | 71 | 87 | 100 | 88 | 84 |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 |
|---|---|---|---|---|---|---|---|---|---|
| A 1 | A1-01 DO YOU USE AN INSTRUMENT, SUCH AS METER OR AN OSCILLOSCOPE, IN WHICH IT IS NECESSARY TO AMPLIFY OR | 87 | 94 | 89 | 76 | 87 | 100 | 92 | 74 |
| A 2 | A1-02 DO YOU USE A PUBLICATION, SUCH AS A TECHNICAL ORDER OR MAINTENANCE MANUAL, IN WHICH IT IS NECESSARY | 45 | 43 | 47 | 43 | 36 | 0 | 31 | 53 |
| A 3 | A1-03 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS. | 35 | 32 | 37 | 32 | 51 | 0 | 57 | 42 |
| A 4 | A1-04 DO YOU FIND THE SQUARE ROOT OF A QUANTITY. | 8 | 13 | 8 | 6 | 9 | 0 | 8 | 11 |
| A 5 | A1-05 DO YOU SOLVE FOR AN UNKNOWN QUANTITY. | 25 | 27 | 27 | 22 | 27 | 0 | 31 | 21 |
| A 6 | A1-06 DO YOU CONVERT NUMBERS TO LOGARITHMS. | 3 | 5 | 2 | 5 | 4 | 0 | 6 | 0 |
| A 7 | A1-07 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS. | 6 | 5 | 5 | 8 | 9 | 0 | 8 | 11 |
| A 8 | A1-08 DO YOU SOLVE QUADRATIC EQUATIONS. | 3 | 5 | 2 | 3 | 3 | 0 | 2 | 5 |
| A 9 | A1-09 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS (THIS IS THE LOGARITHM SYSTEM WHICH USES THE NUMBER 2.718 AS | 2 | 2 | 2 | 3 | 1 | 0 | 2 | 0 |
| A 10 | A1-10 DO YOU WORK WITH VECTOR QUANTITIES, SUCH AS ADDING OR SUBTRACTING TWO VECTORS. | 7 | 8 | 7 | 8 | 6 | 0 | 6 | 5 |
| A 11 | A1-11 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT. | 16 | 13 | 15 | 20 | 11 | 0 | 12 | 11 |
| A 12 | A1-12 DO YOU DETERMINE AREAS OF PLANE FIGURES, SUCH AS AREAS OF CIRCLES OR TRIANGLES. | 2 | 2 | 1 | 3 | 0 | 0 | 0 | 0 |
| A 13 | A1-13 DO YOU SOLVE OR USE SIMULTANEOUS EQUATIONS. | 5 | 5 | 4 | 6 | 7 | 0 | 8 | 5 |
| A 14 | A1-14 DO YOU SOLVE OR USE PROPORTIONS. | 18 | 16 | 20 | 14 | 19 | 0 | 22 | 11 |
| A 15 | A2-01 DO YOU USE THE TERM VOLTAGE OR VOLT. | 98 | 97 | 98 | 97 | 99 | 100 | 100 | 95 |
| A 16 | A2-02 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF). | 31 | 32 | 30 | 31 | 37 | 0 | 35 | 47 |
| A 17 | A2-03 DO YOU USE THE TERM OHM. | 96 | 95 | 97 | 96 | 97 | 100 | 98 | 95 |
| A 18 | A2-04 DO YOU USE THE TERM ION. | 9 | 11 | 6 | 13 | 13 | 0 | 8 | 26 |
| A 19 | A2-05 DO YOU USE THE TERM DYNE. | 4 | 5 | 2 | 8 | 4 | 0 | 0 | 16 |
| A 20 | A2-06 DO YOU USE THE TERM AMPERE. | 87 | 83 | 89 | 85 | 89 | 100 | 94 | 74 |
| A 21 | A2-07 DO YOU USE THE TERM NEUTRON. | 8 | 10 | 7 | 11 | 11 | 0 | 6 | 26 |
| A 22 | A2-08 DO YOU USE THE TERM COULOMB. | 8 | 10 | 6 | 12 | 13 | 0 | 10 | 21 |
| A 23 | A2-09 DO YOU USE THE TERM PROTON. | 10 | 11 | 8 | 12 | 14 | 0 | 10 | 26 |
| A 24 | A3-01 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB. | 80 | 75 | 83 | 76 | 79 | 100 | 86 | 58 |
| A 25 | A3-02 DO YOU INSPECT RESISTORS. | 84 | 78 | 85 | 84 | 87 | 100 | 86 | 89 |
| A 26 | A3-03 DO YOU CLEAN RESISTORS. | 49 | 37 | 54 | 43 | 67 | 50 | 67 | 68 |
| A 27 | A3-04 DO YOU ADJUST RESISTORS. | 86 | 78 | 88 | 86 | 91 | 100 | 90 | 95 |
| A 28 | A3-05 DO YOU CHECK OHMIC VALUE OF RESISTORS. | 83 | 75 | 85 | 83 | 87 | 100 | 86 | 89 |
| A 29 | A3-06 DO YOU REMOVE OR REPLACE RESISTORS. | 72 | 60 | 74 | 75 | 83 | 100 | 82 | 84 |
| A 30 | A3-07 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS IN YOUR PRESENT JOB. | 20 | 16 | 19 | 26 | 24 | 0 | 20 | 37 |
| A 31 | A3-08 DO YOU USE OR REFER TO RESISTOR SYMBOLS, SUCH AS FOR FIXED RESISTORS OR FOR TAPPED RESISTORS. | 77 | 63 | 78 | 83 | 86 | 50 | 84 | 95 |
| A 32 | A3-09 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FIXED WIRE, SLIDE TAP, RHEOSTAT OR | 69 | 60 | 69 | 74 | 73 | 100 | 69 | 79 |

MATHEMATICS

EXAMPLE OF A LOW UTILIZATION AREA

DIRECT CURRENT AND VOLTAGE

RESISTANCE

EXAMPLE OF A HIGH UTILIZATION AREA

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 33 | A3-10 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE OHMIC VALUE OF RESISTANCE. | 72 | 62 | 73 | 76 | 77 | 50 | 73 | 89 | |
| A | 34 | A3-11 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE TOLERANCE OF RESISTORS. | 61 | 44 | 60 | 73 | 69 | 50 | 61 | 89 | |
| A | 35 | A3-12 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE FAILURE RATE OF RESISTORS. | 11 | 10 | 12 | 10 | 13 | 0 | 12 | 16 | |
| A | 36 | A3-13 DO YOU MAKE DECISIONS IN WHICH YOU MUST DETERMINE HOW TWO OR MORE BATTERIES MUST BE CONNECTED TOGETHER TO | 12 | 11 | 10 | 16 | 23 | 50 | 16 | 37 | |
| A | 37 | A3-14 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT ANY OF THE FOLLOWING COMPONENTS: BATTERY, | 84 | 81 | 85 | 84 | 89 | 50 | 90 | 89 | |
| A | 38 | A3-15 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS. | 35 | 25 | 36 | 40 | 40 | 0 | 37 | 53 | |
| A | 39 | A3-16 DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS. | 30 | 22 | 29 | 36 | 39 | 0 | 33 | 58 | |
| A | 40 | A3-17 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS. | 32 | 24 | 32 | 38 | 41 | 0 | 39 | 53 | |
| A | 41 | A3-18 DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS. | 22 | 19 | 21 | 27 | 37 | 0 | 35 | 47 | |
| A | 42 | A3-19 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS. | 33 | 24 | 32 | 39 | 41 | 0 | 35 | 63 | |
| A | 43 | A3-20 DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS. | 28 | 22 | 27 | 34 | 37 | 0 | 29 | 63 | |
| A | 44 | A3-21 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS. | 30 | 21 | 30 | 37 | 41 | 0 | 35 | 63 | |
| A | 45 | A3-22 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS. | 26 | 19 | 26 | 31 | 34 | 0 | 27 | 58 | |
| A | 46 | A3-23 DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS. | 20 | 14 | 19 | 26 | 34 | 0 | 29 | 53 | |
| A | 47 | A3-24 DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS. | 32 | 21 | 32 | 39 | 43 | 0 | 37 | 63 | |
| A | 48 | A3-25 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS. | 28 | 19 | 27 | 34 | 39 | 0 | 31 | 63 | |
| A | 49 | A3-26 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS. | 30 | 21 | 30 | 34 | 41 | 0 | 37 | 58 | |
| A | 50 | A3-27 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS. | 25 | 14 | 26 | 31 | 37 | 0 | 31 | 58 | |
| A | 51 | A3-28 DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS. | 19 | 14 | 18 | 25 | 39 | 0 | 35 | 53 | |
| B | 52 | B1-01 DO YOU MEASURE RESISTANCE. | 92 | 94 | 93 | 90 | 94 | 100 | 96 | 89 | |
| B | 53 | B1-02 DO YOU REPAIR AN OHMMETER. | 3 | 5 | 3 | 3 | 6 | 0 | 4 | 11 | |
| B | 54 | B1-03 DO YOU MEASURE VOLTAGE. | 93 | 92 | 95 | 89 | 94 | 100 | 96 | 89 | |
| B | 55 | B1-04 DO YOU REPAIR A VOLTMETER. | 2 | 3 | 2 | 2 | 3 | 0 | 2 | 5 | MULTIMETER USES |
| B | 56 | B1-05 DO YOU REPAIR AN AMMETER. | 2 | 3 | 1 | 2 | 3 | 0 | 2 | 5 | |
| B | 57 | B1-06 DO YOU MEASURE CURRENT. | 74 | 78 | 74 | 70 | 89 | 50 | 94 | 79 | |
| B | 58 | B1-07 DO YOU USE A MULTIMETER. | 93 | 89 | 95 | 89 | 94 | 100 | 96 | 89 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | DY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| a | 59 | B1-08 DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB. | 3 | 6 | 3 | 2 | 3 | 0 | 4 | 0 | |
| a | 60 | B1-09 DO YOU READ SCHEMATICS. | 92 | 89 | 95 | 89 | 91 | 50 | 94 | 89 | |
| a | 61 | B2-01 DO YOU USE OR REFER THE TERM EFFECTIVE VOLTAGE (RMS). | 75 | 57 | 78 | 80 | 87 | 100 | 88 | 84 | |
| a | 62 | B2-02 DO YOU USE OR REFER THE TERM PEAK TO PEAK VOLTAGE. | 90 | 89 | 92 | 87 | 90 | 100 | 92 | 84 | ALTERNATING CURRENT |
| a | 63 | B2-03 DO YOU USE OR REFER THE TERM AVERAGE VOLTAGE (DC). | 76 | 73 | 79 | 71 | 84 | 50 | 88 | 79 | |
| a | 64 | B2-04 DO YOU USE OR REFER THE TERM WAVE LENGTH. | 68 | 71 | 72 | 55 | 57 | 50 | 63 | 42 | |
| a | 65 | B2-05 DO YOU USE OR REFER THE TERM FREQUENCY. | 92 | 90 | 94 | 89 | 96 | 100 | 98 | 89 | |
| a | 66 | B2-06 DO YOU USE OR REFER THE TERM INSTANTANEOUS VALUE. | 32 | 30 | 32 | 32 | 34 | 50 | 33 | 37 | |
| a | 67 | B3-01 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB. | 62 | 57 | 61 | 69 | 76 | 100 | 78 | 68 | |
| a | 68 | B3-02 DO YOU INSPECT INDUCTORS. | 52 | 40 | 51 | 60 | 66 | 50 | 65 | 68 | |
| a | 69 | B3-03 DO YOU CLEAN INDUCTORS. | 28 | 16 | 31 | 28 | 47 | 50 | 49 | 42 | INDUCTORS AND INDUCTIVE REACTANCE |
| a | 70 | B3-04 DO YOU ADJUST INDUCTORS. | 35 | 29 | 34 | 42 | 71 | 100 | 65 | 84 | |
| a | 71 | B3-05 DO YOU REMOVE OR REPLACE INDUCTORS. | 39 | 29 | 39 | 46 | 61 | 50 | 59 | 68 | |
| a | 72 | B3-06 DO YOU USE OR REFER TO INDUCTANCE. | 40 | 24 | 41 | 49 | 66 | 50 | 61 | 79 | |
| a | 73 | B3-07 DO YOU USE OR REFER TO HENRIES. | 29 | 17 | 28 | 41 | 50 | 50 | 43 | 68 | |
| a | 74 | B3-08 DO YOU USE OR REFER TO INDUCTIVE REACTANCE. | 27 | 14 | 24 | 41 | 41 | 50 | 33 | 63 | |
| a | 75 | B3-09 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS. | 2 | 0 | 2 | 2 | 6 | 0 | 6 | 5 | |
| a | 76 | B3-10 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS. | 6 | 5 | 4 | 8 | 10 | 0 | 6 | 21 | |
| a | 77 | B3-11 DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS. | 5 | 3 | 5 | 7 | 10 | 0 | 10 | 11 | |
| a | 78 | B3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE | 5 | 3 | 5 | 4 | 9 | 0 | 10 | 5 | |
| a | 79 | B3-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE | 4 | 2 | 4 | 3 | 9 | 0 | 10 | 5 | |
| a | 80 | B3-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO | 5 | 6 | 4 | 7 | 10 | 0 | 6 | 16 | |
| a | 81 | B3-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE | 4 | 3 | 4 | 5 | 10 | 0 | 10 | 11 | |
| a | 82 | B3-16 DO YOU CALCULATE INDUCTANCE FOR A PARTICULAR INDUCTOR USING FORMULAS. | 4 | 6 | 4 | 5 | 4 | 0 | 4 | 5 | |
| a | 83 | B3-17 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES. | 7 | 8 | 6 | 8 | 7 | 0 | 10 | 0 | |
| a | 84 | B3-18 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL. | 7 | 10 | 6 | 8 | 7 | 0 | 10 | 0 | |
| a | 85 | B3-19 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES-PARALLEL CIRCUITS. | 7 | 6 | 6 | 8 | 7 | 0 | 10 | 0 | |
| a | 86 | B3-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS. | 18 | 13 | 15 | 26 | 23 | 0 | 16 | 42 | |
| a | 87 | B3-21 DO YOU CALCULATE INDUCTIVE REACTANCE. | 7 | 6 | 5 | 12 | 9 | 0 | 6 | 16 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 88 | B3-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO | 15 | 10 | 14 | 20 | 24 | 0 | 20 | 37 | |
| A | 89 | B3-23 DO YOU WORK WITH POWER INDUCTORS. | 31 | 25 | 32 | 30 | 39 | 50 | 41 | 32 | |
| A | 90 | B3-24 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS. | 30 | 22 | 30 | 35 | 61 | 50 | 61 | 63 | |
| A | 91 | B3-25 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS. | 41 | 33 | 40 | 47 | 63 | 50 | 63 | 63 | |
| C | 92 | C1-01 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS ON YOUR PRESENT JOB. | 72 | 70 | 73 | 72 | 78 | 100 | 82 | 58 | |
| C | 93 | C1-02 DO YOU INSPECT CAPACITORS. | 67 | 49 | 69 | 74 | 76 | 50 | 73 | 84 | CAPACITORS AND CAPACITIVE REACTANCE |
| C | 94 | C1-03 DO YOU CLEAN CAPACITORS. | 38 | 22 | 45 | 34 | 54 | 50 | 59 | 42 | |
| C | 95 | C1-04 DO YOU ADJUST CAPACITORS. | 46 | 37 | 47 | 50 | 79 | 100 | 76 | 84 | |
| C | 96 | C1-05 DO YOU TEST CAPACITORS. | 48 | 25 | 52 | 53 | 59 | 50 | 59 | 58 | |
| C | 97 | C1-06 DO YOU DISCHARGE CAPACITORS. | 45 | 30 | 48 | 46 | 59 | 50 | 59 | 58 | |
| C | 98 | C1-07 DO YOU REMOVE OR REPLACE CAPACITORS. | 55 | 33 | 57 | 61 | 73 | 50 | 73 | 74 | |
| C | 99 | C1-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE. | 8 | 5 | 7 | 12 | 16 | 0 | 12 | 26 | |
| C | 100 | C1-09 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC. | 2 | 0 | 2 | 1 | 6 | 0 | 6 | 5 | |
| C | 101 | C1-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS. | 56 | 44 | 55 | 63 | 74 | 100 | 73 | 74 | |
| C | 102 | C1-11 DO YOU USE OR REFER TO CAPACITANCE. | 61 | 43 | 64 | 64 | 79 | 100 | 80 | 74 | |
| C | 103 | C1-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT. | 11 | 5 | 10 | 15 | 19 | 0 | 14 | 32 | |
| C | 104 | C1-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS. | 35 | 22 | 37 | 40 | 49 | 0 | 45 | 63 | |
| C | 105 | C1-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE. | 22 | 13 | 21 | 30 | 33 | 0 | 29 | 47 | |
| C | 106 | C1-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES. | 20 | 14 | 19 | 25 | 31 | 0 | 27 | 47 | |
| C | 107 | C1-16 THE CAPACITORS YOU WORK WITH IN DC CIRCUITS. | 70 | 56 | 71 | 76 | 81 | 100 | 82 | 79 | |
| C | 108 | C1-17 THE CAPACITORS YOU WORK WITH ARE IN AC CIRCUITS. | 69 | 56 | 70 | 73 | 81 | 100 | 82 | 79 | |
| C | 109 | C1-18 THE CAPACITORS YOU WORK WITH ARE IN CIRCUITS WITH BOTH DC AND AC. | 65 | 48 | 66 | 73 | 79 | 100 | 80 | 74 | |
| C | 110 | C1-19 THE CAPACITORS YOU WORK WITH ARE DON'T REMEMBER WHICH CIRCUITS. | 15 | 19 | 15 | 11 | 10 | 0 | 8 | 16 | |
| C | 111 | C1-20 DO YOU CALCULATE CAPACITANCE FOR A PARTICULAR CAPACITOR USING FORMULAS. | 4 | 2 | 4 | 6 | 7 | 0 | 4 | 16 | |
| C | 112 | C1-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL | 3 | 2 | 4 | 3 | 4 | 0 | 6 | 0 | |
| C | 113 | C1-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL | 5 | 2 | 5 | 6 | 11 | 0 | 12 | 11 | |
| C | 114 | C1-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES. | 12 | 10 | 11 | 15 | 17 | 0 | 12 | 32 | |
| C | 115 | C1-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL. | 12 | 8 | 11 | 16 | 19 | 0 | 12 | 37 | |
| C | 116 | C1-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS. | 11 | 8 | 10 | 15 | 17 | 0 | 12 | 32 | |
| C | 117 | C1-26 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY | 22 | 16 | 22 | 26 | 34 | 0 | 33 | 42 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | Dy-TSk | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| C 118 | C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS. | 17 | 11 | 15 | 25 | 26 | 0 | 16 | 53 | |
| C 119 | C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO | 13 | 8 | 13 | 18 | 23 | 0 | 18 | 37 | |
| C 120 | C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE. | 7 | 6 | 6 | 9 | 9 | 0 | 6 | 16 | |
| C 121 | C1-30 DO YOU WORK WITH ROTOR-STATOR CAPACITORS (VARIABLE). | 35 | 25 | 36 | 38 | 67 | 100 | 67 | 63 | |
| C 122 | C1-31 DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS. | 27 | 19 | 26 | 35 | 49 | 50 | 45 | 58 | |
| C 123 | C1-32 DO YOU WORK WITH ELECTROLYTIC CAPACITORS (FIXED). | 57 | 38 | 56 | 70 | 64 | 0 | 65 | 68 | |
| C 124 | C1-33 DO YOU WORK WITH PAPER CAPACITORS (FIXED). | 46 | 29 | 45 | 63 | 57 | 50 | 53 | 68 | |
| C 125 | C1-34 DO YOU WORK WITH MICA CAPACITORS (FIXED). | 52 | 35 | 51 | 66 | 64 | 50 | 61 | 74 | |
| C 126 | C1-35 DO YOU WORK WITH CERAMIC CAPACITORS (FIXED). | 53 | 33 | 53 | 65 | 66 | 50 | 63 | 74 | |
| C 127 | C1-36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS. | 22 | 29 | 26 | 11 | 19 | 0 | 20 | 16 | |
| C 128 | C2-01 DO YOU WORK WITH TRANSFORMERS ON YOUR PRESENT JOB. | 69 | 49 | 72 | 73 | 71 | 50 | 69 | 79 | |
| C 129 | C2-02 DO YOU INSPECT TRANSFORMERS. | 62 | 41 | 65 | 65 | 69 | 50 | 67 | 74 | |
| C 130 | C2-03 DO YOU CLEAN TRANSFORMERS. | 35 | 19 | 43 | 26 | 47 | 50 | 55 | 26 | |
| C 131 | C2-04 DO YOU ADJUST TRANSFORMERS. | 29 | 27 | 28 | 32 | 46 | 50 | 43 | 53 | |
| C 132 | C2-05 DO YOU TROUBLESHOOT TRANSFORMERS. | 50 | 37 | 51 | 58 | 57 | 50 | 55 | 63 | TRANSFORMERS |
| C 133 | C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS. | 58 | 44 | 62 | 57 | 64 | 50 | 65 | 63 | |
| C 134 | C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING. | 2 | 5 | 2 | 2 | 1 | 0 | 2 | 0 | |
| C 135 | C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (M). | 4 | 3 | 4 | 4 | 4 | 0 | 4 | 5 | |
| C 136 | C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M. | 2 | 2 | 2 | 3 | 1 | 0 | 2 | 0 | |
| C 137 | C2-10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS. | 5 | 8 | 4 | 6 | 7 | 50 | 4 | 11 | |
| C 138 | C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS. | 5 | 5 | 4 | 6 | 1 | 0 | 2 | 0 | |
| C 139 | C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS. | 5 | 5 | 4 | 7 | 7 | 0 | 4 | 16 | |
| C 140 | C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS. | 3 | 3 | 3 | 3 | 1 | 0 | 2 | 0 | |
| C 141 | C2-14 DO YOU WORK WITH AUTOTRANSFORMERS. | 22 | 22 | 18 | 32 | 21 | 50 | 14 | 37 | |
| C 142 | C2-15 DO YOU WORK WITH POWER TRANSFORMERS. | 56 | 33 | 58 | 66 | 64 | 50 | 63 | 68 | |
| C 143 | C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS. | 31 | 16 | 32 | 39 | 56 | 50 | 51 | 68 | |
| C 144 | C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS. | 40 | 25 | 40 | 48 | 61 | 50 | 59 | 68 | |
| C 145 | C2-18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMER. | 18 | 19 | 21 | 8 | 16 | 0 | 18 | 11 | |
| C 146 | C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE. | 53 | 27 | 54 | 65 | 63 | 50 | 55 | 84 | |
| C 147 | C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE. | 49 | 27 | 51 | 59 | 59 | 50 | 53 | 74 | |
| C 148 | C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES. | 44 | 25 | 45 | 54 | 56 | 50 | 51 | 68 | |
| C 149 | C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR | 12 | 8 | 12 | 12 | 11 | 0 | 12 | 11 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| C 150 | C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP- | 19 | 13 | 21 | 21 | 29 | 50 | 27 | 32 | |
| C 151 | C2-24 DO YOU REFER TO THE BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS. | 62 | 40 | 66 | 64 | 69 | 50 | 69 | 68 | |
| C 152 | C2-25 DO YOU REFER TO THE MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS. | 50 | 35 | 49 | 59 | 57 | 50 | 53 | 68 | |
| C 153 | C2-26 DO YOU REFER TO THE MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS. | 52 | 35 | 52 | 61 | 59 | 50 | 55 | 66 | |
| C 154 | C2-27 DO YOU REFER TO THE CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS. | 56 | 37 | 57 | 64 | 63 | 50 | 61 | 68 | |
| C 155 | C2-28 DO YOU REFER TO THE AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS. | 35 | 25 | 38 | 34 | 46 | 0 | 47 | 47 | |
| C 156 | C2-29 DO YOU REFER TO THE IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS. | 37 | 25 | 40 | 38 | 46 | 0 | 45 | 53 | |
| C 157 | C2-30 DO YOU REFER TO THE COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS. | 48 | 29 | 52 | 50 | 63 | 0 | 61 | 74 | |
| C 158 | C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING | 22 | 16 | 19 | 32 | 20 | 0 | 20 | 21 | |
| C 159 | C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH. | 13 | 13 | 12 | 13 | 17 | 50 | 16 | 16 | |
| C 160 | C2-33 DO YOU REFER TO OR USE THE GENERAL RULE THAT THE TURNS RATIO OF A TRANSFORMER IS EQUAL TO THE VOLTAGE | 11 | 8 | 11 | 13 | 16 | 50 | 14 | 16 | |
| C 161 | C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS. | 17 | 13 | 15 | 25 | 21 | 50 | 16 | 32 | |
| C 162 | C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS. | 5 | 5 | 4 | 6 | 1 | 0 | 2 | 0 | |
| C 163 | C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS. | 3 | 5 | 2 | 3 | 0 | 0 | 0 | 0 | |
| C 164 | C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH 3 PHASE TRANSFORMERS. | 38 | 30 | 35 | 50 | 41 | 50 | 37 | 53 | |
| C 165 | C2-38 DO YOU INSPECT 3 PHASE TRANSFORMERS. | 35 | 24 | 35 | 42 | 36 | 50 | 31 | 47 | |
| C 166 | C2-39 DO YOU CLEAN OR LUBRICATE 3 PHASE TRANSFORMERS. | 11 | 8 | 12 | 12 | 16 | 0 | 16 | 16 | |
| C 167 | C2-40 DO YOU ADJUST 3 PHASE TRANSFORMERS. | 13 | 14 | 12 | 13 | 17 | 50 | 14 | 21 | |
| C 168 | C2-41 DO YOU TROUBLESHOOT 3 PHASE TRANSFORMERS. | 25 | 14 | 24 | 34 | 26 | 50 | 20 | 37 | |
| C 169 | C2-42 DO YOU REMOVE OR REPLACE COMPLETE 3 PHASE TRANSFORMER. | 27 | 21 | 27 | 32 | 27 | 50 | 24 | 32 | |
| C 170 | C2-43 DO YOU REMOVE OR REPLACE 3 PHASE TRANSFORMER PARTS, SUCH AS A WINDING. | 2 | 3 | 0 | 4 | 1 | 0 | 0 | 5 | |
| C 171 | C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS. | 33 | 22 | 36 | 32 | 30 | 0 | 33 | 26 | MAGNETISM |
| C 172 | C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS. | 20 | 17 | 20 | 22 | 23 | 0 | 18 | 37 | |
| C 173 | C3-03 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS. | 6 | 6 | 6 | 6 | 6 | 0 | 6 | 5 | |
| C 174 | C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS. | 5 | 8 | 5 | 3 | 6 | 0 | 4 | 11 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | Dy-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| C 175 | C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS. | 6 | 8 | 6 | 5 | 6 | 0 | 4 | 11 | |
| C 176 | C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM. | 6 | 5 | 6 | 8 | 13 | 0 | 12 | 16 | |
| C 177 | C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX. | 15 | 17 | 14 | 15 | 17 | 0 | 14 | 26 | |
| C 178 | C3-08 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM. | 2 | 2 | 2 | 2 | 1 | 0 | 2 | 0 | |
| C 179 | C3-09 DO YOU USE OR REFER TO THE DOMAIN THEORY OF MAGNETISM. | 2 | 5 | 2 | 2 | 1 | 0 | 2 | 0 | |
| C 180 | C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION. | 13 | 13 | 13 | 14 | 17 | 0 | 18 | 16 | |
| C 181 | C3-11 DO YOU USE OR REFER TO FLUX DENSITY. | 6 | 8 | 7 | 4 | 7 | 0 | 10 | 0 | |
| C 182 | C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES | 31 | 27 | 32 | 31 | 41 | 0 | 41 | 47 | |
| C 183 | C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES. | 13 | 14 | 14 | 9 | 14 | 0 | 16 | 11 | |
| C 184 | C3-14 DO YOU USE THE LEFT THUMB RULE TO FIND THE NORTH POLE OF A CURRENT CARRYING COIL. | 9 | 17 | 7 | 9 | 9 | 0 | 8 | 11 | |
| D 185 | D1-01 DO YOU WORK WITH RC, LR, OR RCL CIRCUITS ON YOUR PRESENT JOB. | 44 | 37 | 45 | 47 | 54 | 0 | 59 | 47 | |
| D 186 | D1-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS. | 8 | 10 | 6 | 11 | 11 | 0 | 8 | 21 | RCL CIRCUITS |
| D 187 | D1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS. | 4 | 5 | 4 | 6 | 9 | 0 | 6 | 16 | |
| D 188 | D1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS. | 8 | 11 | 6 | 10 | 7 | 0 | 4 | 16 | |
| D 189 | D1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS. | 7 | 11 | 5 | 10 | 7 | 0 | 4 | 16 | |
| D 190 | D1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS. | 7 | 8 | 4 | 11 | 7 | 0 | 4 | 16 | |
| D 191 | D1-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS. | 26 | 19 | 26 | 31 | 47 | 0 | 47 | 53 | |
| D 192 | D1-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS. | 14 | 13 | 13 | 16 | 29 | 0 | 29 | 32 | |
| D 193 | D1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN WORKING WITH RCL CIRCUITS. | 16 | 16 | 16 | 18 | 31 | 0 | 31 | 37 | |
| D 194 | D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS. | 20 | 19 | 19 | 25 | 37 | 0 | 37 | 42 | |
| D 195 | D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS. | 13 | 11 | 13 | 14 | 26 | 0 | 24 | 32 | |
| D 196 | D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS. | 9 | 8 | 9 | 8 | 14 | 0 | 14 | 16 | |
| D 197 | D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS. | 28 | 21 | 28 | 31 | 44 | 0 | 45 | 47 | |
| D 198 | D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS. | 34 | 29 | 34 | 36 | 49 | 0 | 51 | 47 | |
| D 199 | D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS. | 30 | 27 | 30 | 32 | 47 | 0 | 49 | 47 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 |
|---|---|---|---|---|---|---|---|---|---|
| D 200 | DI-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS. | 32 | 22 | 35 | 32 | 46 | 0 | 47 | 47 |
| D 201 | DI-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS. | 23 | 22 | 21 | 29 | 34 | 0 | 31 | 47 |
| D 202 | DI-18 DO YOU USE OR REFER TO BRANDPASS REGION WHEN WORKING WITH RCL CIRCUITS. | 25 | 22 | 25 | 27 | 40 | 0 | 41 | 42 |
| D 203 | DI-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS. | 14 | 16 | 12 | 18 | 27 | 0 | 22 | 42 |
| D 204 | DI-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS. | 30 | 27 | 28 | 36 | 50 | 0 | 49 | 58 |
| D 205 | DI-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS: SINE OF AN ANGLE = OPPOSITE SIDE | 3 | 2 | 2 | 7 | 4 | 0 | 2 | 11 |
| D 206 | DI-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS. | 4 | 3 | 6 | 0 | 6 | 0 | 8 | 0 |
| D 207 | DI-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS. | 5 | 10 | 4 | 4 | 4 | 0 | 4 | 5 |
| D 208 | DI-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS. | 3 | 5 | 2 | 3 | 3 | 0 | 2 | 5 |
| D 209 | DI-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS. | 4 | 6 | 4 | 2 | 3 | 0 | 4 | 0 |
| D 210 | DI-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS. | 2 | 6 | 2 | 1 | 1 | 0 | 2 | 0 |
| D 211 | DI-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS. | 4 | 6 | 3 | 3 | 4 | 0 | 4 | 5 |
| D 212 | DI-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS. | 4 | 5 | 3 | 4 | 4 | 0 | 4 | 5 |
| D 213 | DI-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS. | 4 | 5 | 3 | 6 | 6 | 0 | 4 | 11 |
| D 214 | DI-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS. | 4 | 3 | 4 | 3 | 6 | 0 | 6 | 5 |
| D 215 | DI-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS. | 2 | 3 | 2 | 2 | 1 | 0 | 2 | 0 |
| D 216 | DI-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD. | 2 | 2 | 2 | 2 | 1 | 0 | 2 | 0 |
| D 217 | DI-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHMS LAW. | 3 | 3 | 3 | 4 | 4 | 0 | 4 | 5 |
| D 218 | DI-34 DO YOU CHECK CAPACITORS USING OHMMETERS. | 36 | 21 | 37 | 42 | 53 | 50 | 51 | 58 |
| D 219 | DI-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION. | 22 | 11 | 24 | 24 | 37 | 0 | 37 | 42 |
| D 220 | DI-36 DO YOU CHECK INDUCTORS USING OHMMETERS. | 32 | 16 | 33 | 41 | 50 | 50 | 47 | 58 |
| D 221 | DI-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION. | 20 | 10 | 22 | 23 | 36 | 0 | 36 | 42 |
| D 222 | DI-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT THETA=0, PF=1, AND PA=PT FOR RESONANT CIRCUITS. | 2 | 0 | 2 | 4 | 6 | 0 | 4 | 11 |
| D 223 | DI-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS. | 5 | 8 | 4 | 6 | 6 | 0 | 2 | 16 |
| D 224 | DI-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE | 11 | 10 | 10 | 13 | 21 | 0 | 18 | 32 |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| D 225 | D1-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT | 10 | 11 | 9 | 14 | 19 | 0 | 12 | 37 | |
| D 226 | D1-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK | 22 | 24 | 19 | 27 | 26 | 0 | 20 | 42 | |
| D 227 | D1-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q. | 11 | 10 | 10 | 13 | 19 | 0 | 16 | 26 | |
| D 228 | D1-44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT | 7 | 8 | 7 | 6 | 7 | 0 | 6 | 11 | |
| D 229 | D2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH, USE, OR REFER TO SERIES OR PARALLEL RESONANCE CIRCUITS OR | 25 | 21 | 25 | 27 | 40 | 0 | 39 | 47 | |
| D 230 | D2-02 DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS. | 18 | 19 | 17 | 20 | 24 | 0 | 20 | 37 | SERIES AND PARALLEL RESONANCE (TIME CONSTANTS) |
| D 231 | D2-03 DO YOU WORK WITH, USE, OR REFER TO AVAILABLE VOLTAGE. | 9 | 8 | 9 | 11 | 11 | 0 | 8 | 21 | |
| D 232 | D2-04 DO YOU WORK WITH, USE, OR REFER TO TRANSIENT INTERVALS. | 9 | 10 | 7 | 11 | 10 | 0 | 6 | 21 | |
| D 233 | D2-05 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE | 13 | 14 | 12 | 16 | 17 | 0 | 12 | 32 | |
| D 234 | D2-06 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS. | 2 | 3 | 2 | 2 | 3 | 0 | 4 | 0 | |
| D 235 | D2-07 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUITS CURRENT OR COMPONENT VOLTAGES AFTER A | 2 | 5 | 1 | 4 | 1 | 0 | 0 | 5 | |
| D 236 | D2-08 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE THE TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT | 4 | 5 | 3 | 6 | 3 | 0 | 0 | 11 | |
| D 237 | D2-09 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND | 3 | 3 | 2 | 7 | 4 | 0 | 2 | 11 | |
| D 238 | D2-10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IN LR CIRCUITS REACHES ITS MINIMUM VALUE (OR | 7 | 10 | 5 | 9 | 6 | 0 | 0 | 21 | |
| D 239 | D3-01 DO YOU WORK WITH CIRCUITS USED AS FILTERS ON YOUR PRESENT JOB. | 60 | 56 | 62 | 58 | 70 | 50 | 76 | 58 | |
| D 240 | D3-02 DO YOU INSPECT FILTER CIRCUITS. | 50 | 41 | 51 | 54 | 60 | 0 | 61 | 63 | |
| D 241 | D3-03 DO YOU CLEAN FILTER CIRCUITS. | 28 | 16 | 32 | 24 | 43 | 0 | 49 | 32 | |
| D 242 | D3-04 DO YOU ALIGN OR ADJUST FILTER CIRCUITS. | 30 | 32 | 30 | 28 | 46 | 50 | 49 | 37 | FILTERS |
| D 243 | D3-05 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT. | 43 | 27 | 45 | 47 | 60 | 50 | 63 | 53 | |
| D 244 | D3-06 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF FILTER CIRCUITS. | 32 | 13 | 34 | 40 | 53 | 0 | 55 | 53 | |
| D 245 | D3-07 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT. | 49 | 41 | 50 | 51 | 63 | 50 | 65 | 58 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| D 246 | D3-06 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF FILTER CIRCUITS. | 27 | 11 | 29 | 33 | 49 | 0 | 53 | 42 | |
| D 247 | D3-09 DO YOU WORK ON LOW PASS FILTERS. | 38 | 25 | 38 | 44 | 59 | 50 | 59 | 58 | |
| D 248 | D3-10 DO YOU WORK ON HIGH PASS FILTERS. | 38 | 27 | 39 | 42 | 60 | 50 | 61 | 58 | |
| D 249 | D3-11 DO YOU WORK ON BANDPASS FILTERS. | 42 | 32 | 43 | 45 | 64 | 50 | 67 | 58 | |
| D 251 | D3-13 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF FILTER | 30 | 21 | 30 | 37 | 49 | 50 | 47 | 53 | |
| D 250 | D3-12 DO YOU WORK ON BAND-REJECT FILTERS. | 20 | 24 | 21 | 15 | 16 | 0 | 16 | 16 | |
| D 252 | D3-14 DO YOU WORK WITH L-SECTION FILTER CONFIGURATIONS. | 21 | 16 | 19 | 29 | 30 | 50 | 24 | 42 | |
| D 253 | D3-15 DO YOU WORK WITH T-SECTION FILTER CONFIGURATIONS. | 20 | 14 | 18 | 27 | 31 | 0 | 29 | 42 | |
| D 254 | D3-16 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATIONS. | 21 | 17 | 17 | 32 | 34 | 50 | 29 | 47 | |
| D 255 | D3-17 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF FILTER CONFIGURATIONS. | 31 | 30 | 34 | 24 | 39 | 0 | 47 | 21 | |
| D 256 | D3-18 ARE PARALLEL RESONANT CIRCUITS USED IN FILTERS YOU WORK WITH. | 24 | 16 | 22 | 32 | 33 | 50 | 29 | 42 | |
| D 257 | D3-19 ARE SERIES-PARALLEL CIRCUITS USED IN FILTERS YOU WORK WITH. | 25 | 13 | 24 | 36 | 31 | 0 | 29 | 42 | |
| D 258 | D3-20 ARE SERIES RESONANT CIRCUITS USED IN FILTERS YOU WORK WITH. | 23 | 14 | 21 | 33 | 30 | 50 | 24 | 42 | |
| D 259 | D3-21 ARE DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT USED IN FILTERS YOU WORK WITH. | 32 | 30 | 36 | 25 | 39 | 0 | 47 | 21 | |
| D 260 | D3-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC | 3 | 3 | 2 | 4 | 6 | 0 | 4 | 11 | |
| E 261 | E1-01 DO YOU WORK WITH COUPLING DEVICES ON YOUR PRESENT JOB. | 43 | 40 | 43 | 46 | 59 | 0 | 61 | 58 | |
| E 262 | E1-02 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED | 35 | 25 | 34 | 45 | 49 | 0 | 47 | 58 | |
| E 263 | E1-03 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED | 33 | 24 | 31 | 42 | 51 | 0 | 51 | 58 | COUPLING |
| E 264 | E1-04 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED | 35 | 21 | 35 | 45 | 54 | 0 | 55 | 58 | |
| E 265 | E1-05 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE RC COUPLING FUNCTIONS. | 33 | 24 | 32 | 42 | 50 | 0 | 47 | 63 | |
| E 266 | E1-06 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE IMPEDANCE COUPLING FUNCTIONS. | 31 | 25 | 30 | 39 | 51 | 0 | 51 | 58 | |
| E 267 | E1-07 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE TRANSFORMER COUPLING FUNCTIONS. | 33 | 21 | 32 | 42 | 54 | 0 | 53 | 63 | |
| E 268 | E1-08 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS. | 30 | 24 | 28 | 41 | 43 | 0 | 39 | 58 | |
| E 269 | E1-09 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS. | 30 | 25 | 27 | 41 | 43 | 0 | 39 | 58 | |
| E 270 | E1-10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS. | 28 | 22 | 26 | 36 | 44 | 0 | 41 | 58 | |
| E 271 | E1-11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS. | 30 | 22 | 28 | 41 | 47 | 0 | 43 | 63 | |
| E 272 | E1-12 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUIT. | 16 | 17 | 17 | 12 | 23 | 0 | 27 | 16 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | DY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| E | 273 | E2-01 ON YOUR PRESENT JOB DO YOU PERFORM SOLDERING TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS. | 83 | 89 | 82 | 82 | 81 | 100 | 80 | 84 | |
| E | 274 | E2-02 DO YOU SELECT TYPE OF SOLDER TO USE. | 61 | 57 | 60 | 63 | 56 | 50 | 53 | 63 | SOLDERING |
| E | 275 | E2-03 DO YOU ADD FLUX TO CONNECTIONS. | 77 | 73 | 79 | 74 | 80 | 50 | 80 | 84 | |
| E | 276 | E2-04 DO YOU CLEAN CONNECTIONS USING SOLVENTS. | 76 | 76 | 77 | 75 | 74 | 50 | 73 | 79 | |
| E | 277 | E2-05 DO YOU STRIP INSULATION FROM WIRES. | 83 | 89 | 84 | 78 | 81 | 100 | 80 | 84 | |
| E | 278 | E2-06 DO YOU CONNECT OR DISCONNECT HEAT SINKS. | 75 | 71 | 77 | 75 | 74 | 50 | 73 | 79 | |
| E | 279 | E2-07 DO YOU BEND OR SHAPE WIRES OR LEADS. | 81 | 84 | 82 | 78 | 81 | 100 | 80 | 84 | |
| E | 280 | E2-08 DO YOU CUT WIRES. | 83 | 87 | 83 | 78 | 80 | 100 | 78 | 84 | |
| E | 281 | E2-09 DO YOU FILE OR SHAPE SOLDERING IRON TIPS. | 64 | 56 | 65 | 69 | 61 | 50 | 55 | 79 | |
| E | 282 | E2-10 DO YOU TIN SOLDERING IRON TIPS. | 79 | 81 | 80 | 77 | 79 | 100 | 76 | 84 | |
| E | 283 | E2-11 DO YOU CLEAN SOLDERING IRON TIPS. | 81 | 83 | 82 | 77 | 81 | 100 | 80 | 84 | |
| E | 284 | E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS. | 75 | 76 | 75 | 73 | 74 | 50 | 73 | 79 | |
| E | 285 | E2-13 DO YOU TIN OR PRE-TIN CONDUCTORS. | 77 | 78 | 77 | 77 | 79 | 100 | 76 | 84 | |
| E | 286 | E2-14 DO YOU INSPECT SOLDERED CONNECTIONS. | 82 | 84 | 81 | 82 | 80 | 100 | 76 | 89 | |
| E | 287 | E2-15 DO YOU DESOLDER CONNECTIONS BY WICKING. | 70 | 73 | 71 | 67 | 70 | 50 | 65 | 84 | |
| E | 288 | E2-16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING TOOLS. | 66 | 49 | 70 | 67 | 73 | 50 | 73 | 74 | |
| E | 289 | E2-17 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS. | 58 | 44 | 60 | 60 | 61 | 0 | 59 | 74 | |
| E | 290 | E2-18 DO YOU CRUSH COMPONENTS FOR REMOVAL. | 23 | 16 | 25 | 23 | 27 | 0 | 27 | 32 | |
| E | 291 | E2-19 DO YOU MAKE HARDWIRE CONNECTIONS. | 77 | 75 | 79 | 75 | 71 | 100 | 65 | 84 | |
| E | 292 | E2-20 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS | 58 | 51 | 61 | 57 | 69 | 50 | 67 | 74 | |
| E | 293 | E2-21 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS | 61 | 57 | 63 | 59 | 67 | 50 | 69 | 63 | |
| E | 294 | E2-22 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS | 57 | 49 | 59 | 58 | 66 | 50 | 67 | 63 | |
| E | 295 | E3-01 DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB | 75 | 79 | 74 | 75 | 80 | 100 | 82 | 74 | |
| E | 296 | E3-02 DO YOU ADJUST RELAYS | 13 | 17 | 13 | 10 | 19 | 0 | 19 | 21 | |
| E | 297 | E3-03 DO YOU CLEAN RELAYS | 32 | 21 | 36 | 29 | 43 | 0 | 47 | 37 | |
| E | 298 | E3-04 DO YOU INSPECT RELAYS | 56 | 51 | 55 | 61 | 63 | 50 | 61 | 68 | RELAYS |
| E | 299 | E3-05 DO YOU REMOVE OR REPLACE COMPLETE RELAYS | 68 | 65 | 69 | 69 | 71 | 100 | 71 | 68 | |
| E | 300 | E3-06 DO YOU REMOVE OR REPLACE PARTS OR RELAYS | 7 | 14 | 5 | 8 | 7 | 0 | 6 | 11 | |
| E | 301 | E3-07 DO YOU TROUBLESHOOT RELAYS | 63 | 48 | 65 | 68 | 67 | 50 | 65 | 74 | |
| E | 302 | E3-08 DO YOU STRAIGHTEN RELAY CONTACTS | 29 | 22 | 31 | 27 | 36 | 0 | 43 | 21 | |
| E | 303 | E3-09 DO YOU PERFORM TASKS ON RELAY CONTACTS | 20 | 19 | 20 | 22 | 30 | 0 | 31 | 32 | |
| E | 304 | E3-10 DO YOU PERFORM TASKS ON RELAY CORES | 3 | 5 | 2 | 3 | 3 | 0 | 2 | 5 | |
| E | 305 | E3-11 DO YOU PERFORM TASKS ON RELAY COILS | 4 | 5 | 4 | 4 | 6 | 0 | 6 | 5 | |
| E | 306 | E3-12 DO YOU PERFORM TASKS ON RELAY ARMATURES | 5 | 6 | 5 | 5 | 11 | 0 | 12 | 11 | |
| E | 307 | E3-13 DO YOU PERFORM TASKS ON RELAY SPRINGS | 6 | 8 | 4 | 7 | 10 | 0 | 10 | 11 | |
| E | 308 | E3-14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPEN (NO) SCHEMATIC SYMBOLS FOR RELAYS | 59 | 51 | 59 | 63 | 61 | 0 | 63 | 63 | |
| E | 309 | E3-15 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS | 58 | 49 | 58 | 61 | 61 | 0 | 63 | 63 | |
| E | 310 | E3-16 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS | 57 | 54 | 57 | 60 | 61 | 0 | 63 | 63 | |
| E | 311 | E3-17 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS | 56 | 52 | 55 | 61 | 60 | 0 | 61 | 63 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| F 312 | E3-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC SYMBOLS FOR RELAYS | 55 | 54 | 52 | 62 | 54 | 0 | 51 | 66 | |
| F 313 | E3-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE | 51 | 37 | 51 | 62 | 59 | 100 | 51 | 74 | |
| F 314 | F1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES | 8 | 2 | 8 | 10 | 30 | 0 | 31 | 32 | |
| F 315 | F1-02 DO YOU INSPECT MICROPHONES | 6 | 0 | 6 | 8 | 26 | 0 | 29 | 21 | |
| F 316 | F1-03 DO YOU CLEAN MICROPHONES | 5 | 0 | 6 | 8 | 24 | 0 | 27 | 21 | MICROPHONES |
| F 317 | F1-04 DO YOU OPERATE MICROPHONES | 7 | 2 | 6 | 10 | 29 | 0 | 29 | 32 | |
| F 318 | F1-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT | 4 | 2 | 4 | 5 | 17 | 0 | 18 | 16 | |
| F 319 | F1-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS | 2 | 2 | 2 | 3 | 4 | 0 | 4 | 5 | |
| F 320 | F1-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES | 5 | 2 | 4 | 8 | 20 | 0 | 20 | 21 | |
| F 321 | F1-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS | 2 | 2 | 1 | 6 | 6 | 0 | 4 | 11 | |
| F 322 | F1-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES | 5 | 2 | 4 | 8 | 20 | 0 | 19 | 26 | |
| F 323 | F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES | 1 | 2 | 0 | 3 | 4 | 0 | 7 | 11 | |
| F 324 | F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES | 2 | 0 | 2 | 1 | 9 | 0 | 12 | 0 | |
| F 325 | F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES | 4 | 2 | 4 | 7 | 17 | 0 | 16 | 21 | |
| F 326 | F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | |
| F 327 | F2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS | 6 | 5 | 5 | 9 | 21 | 0 | 22 | 21 | |
| F 328 | F2-02 DO YOU INSPECT SPEAKERS | 4 | 0 | 4 | 7 | 14 | 0 | 14 | 11 | |
| F 329 | F2-03 DO YOU CLEAN SPEAKERS | 3 | 0 | 4 | 5 | 13 | 0 | 16 | 5 | |
| F 330 | F2-04 DO YOU OPERATE SPEAKERS | 6 | 5 | 5 | 9 | 21 | 0 | 22 | 21 | SPEAKERS |
| F 331 | F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT | 4 | 3 | 4 | 6 | 16 | 0 | 16 | 16 | |
| F 332 | F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS | 1 | 0 | 1 | 2 | 4 | 0 | 4 | 5 | |
| F 333 | F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS | 4 | 3 | 4 | 5 | 16 | 0 | 16 | 16 | |
| F 334 | F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 5 | |
| F 335 | F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| F 336 | F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | |
| F 337 | F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| F 338 | F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | |
| F 339 | F2-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| F 340 | F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| F 341 | F2-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | |
| F 342 | F3-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB | 93 | 90 | 95 | 89 | 91 | 100 | 92 | 89 | |
| F 343 | F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS | 90 | 81 | 92 | 90 | 93 | 100 | 94 | 89 | |
| F 344 | F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS | 85 | 81 | 87 | 81 | 90 | 100 | 92 | 84 | |
| F 345 | F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS | 85 | 79 | 87 | 83 | 89 | 100 | 90 | 84 | OSCILLOSCOPES |
| F 346 | F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY | 86 | 83 | 87 | 84 | 81 | 50 | 88 | 68 | |
| F 347 | F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME | 87 | 81 | 89 | 83 | 81 | 100 | 84 | 74 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| F 348 | F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS | 30 | 30 | 28 | 35 | 21 | 0 | 16 | 37 | |
| F 349 | F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES | 84 | 78 | 87 | 80 | 89 | 100 | 92 | 79 | |
| F 350 | F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS | 59 | 54 | 59 | 63 | 67 | 100 | 69 | 58 | |
| F 351 | F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE | 89 | 87 | 91 | 87 | 89 | 100 | 90 | 84 | |
| F 352 | F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS | 64 | 54 | 64 | 71 | 63 | 0 | 67 | 58 | |
| F 353 | F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE | 89 | 84 | 92 | 86 | 87 | 100 | 90 | 79 | |
| G 354 | G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB | 71 | 57 | 72 | 78 | 81 | 0 | 84 | 84 | |
| G 355 | G1-02 DO YOU INSPECT DIODES | 63 | 44 | 64 | 73 | 74 | 0 | 73 | 84 | |
| G 356 | G1-03 DO YOU REMOVE OR REPLACE DIODES | 58 | 41 | 60 | 65 | 71 | 0 | 73 | 74 | SEMICONDUCTOR DIODES |
| G 357 | G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT | 60 | 40 | 60 | 72 | 74 | 0 | 73 | 84 | |
| G 358 | G1-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES | 2 | 0 | 3 | 2 | 6 | 0 | 6 | 5 | |
| G 359 | G1-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, | 3 | 0 | 3 | 3 | 10 | 0 | 10 | 11 | |
| G 360 | G1-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES | 11 | 8 | 12 | 12 | 23 | 0 | 24 | 21 | |
| G 361 | G1-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES | 39 | 25 | 36 | 52 | 56 | 0 | 53 | 68 | |
| G 362 | G1-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON | 55 | 40 | 54 | 65 | 69 | 0 | 69 | 74 | |
| G 363 | G1-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW | 6 | 6 | 6 | 6 | 6 | 0 | 6 | 5 | |
| G 364 | G1-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE | 41 | 29 | 41 | 49 | 61 | 0 | 59 | 74 | |
| G 365 | G1-12 DO YOU USE OR REFER TO DIODE COLOR CODING | 22 | 14 | 21 | 31 | 27 | 0 | 27 | 32 | |
| G 366 | G1-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | |
| G 367 | G1-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS | 1 | 0 | 1 | 1 | 3 | 0 | 2 | 5 | |
| G 368 | G1-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN 538 | 44 | 29 | 44 | 55 | 56 | 0 | 53 | 68 | |
| G 369 | G1-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT | 1 | 2 | 1 | 0 | 1 | 0 | 2 | 0 | |
| G 370 | G1-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT | 1 | 0 | 1 | 1 | 3 | 0 | 2 | 5 | |
| G 371 | G1-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE | 40 | 25 | 40 | 50 | 60 | 0 | 59 | 68 | |
| G 372 | G1-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT | 1 | 2 | 1 | 1 | 3 | 0 | 2 | 5 | |
| G 373 | G1-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON | 0 | 0 | 0 | 1 | 3 | 0 | 2 | 5 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 |
|---|---|---|---|---|---|---|---|---|---|
| G 374 | GI-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 5 |
| G 375 | GI-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL) | 2 | 2 | 2 | 1 | 3 | 0 | 2 | 5 |
| G 376 | GI-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM) | 1 | 2 | 1 | 1 | 3 | 0 | 2 | 5 |
| G 377 | GI-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END | 55 | 37 | 55 | 65 | 67 | 0 | 67 | 74 |
| G 378 | GI-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON | 9 | 5 | 9 | 13 | 13 | 0 | 12 | 16 |
| G 379 | GI-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE | 23 | 19 | 22 | 29 | 24 | 0 | 24 | 26 |
| G 380 | GI-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT | 5 | 3 | 5 | 6 | 6 | 0 | 8 | 0 |
| G 381 | GI-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR | 41 | 32 | 41 | 46 | 51 | 0 | 55 | 47 |
| G 382 | GI-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS | 1 | 2 | 1 | 1 | 3 | 0 | 2 | 5 |
| G 383 | GI-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| G 384 | GI-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 |
| G 385 | GI-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| G 386 | GI-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 5 |
| G 387 | GI-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS | 6 | 3 | 5 | 11 | 9 | 0 | 4 | 21 |
| G 388 | GI-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 5 |
| G 389 | GI-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 5 |
| G 390 | GI-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL | 13 | 5 | 13 | 19 | 21 | 0 | 22 | 21 |
| G 391 | GI-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL | 14 | 5 | 14 | 19 | 21 | 0 | 22 | 21 |
| G 392 | GI-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS | 2 | 6 | 1 | 3 | 1 | 0 | 0 | 5 |
| G 393 | GI-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS | 2 | 6 | 1 | 2 | 0 | 0 | 0 | 0 |
| G 394 | GI-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 |
| G 395 | GI-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS | 3 | 3 | 3 | 3 | 1 | 0 | 2 | 0 |
| G 396 | GI-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL | 2 | 2 | 1 | 4 | 1 | 0 | 2 | 0 |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | By-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| G | 397 | G1-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES | 44 | 29 | 40 | 59 | 63 | 0 | 59 | 79 | |
| G | 398 | G1-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS | 1 | 0 | 1 | 1 | 1 | 0 | 2 | 0 | |
| G | 399 | G1-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION | 23 | 11 | 21 | 35 | 29 | 0 | 24 | 42 | |
| G | 400 | G1-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS | 9 | 8 | 8 | 14 | 14 | 0 | 12 | 21 | |
| G | 401 | G1-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS | 8 | 6 | 7 | 10 | 13 | 0 | 12 | 16 | |
| G | 402 | G1-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS | 10 | 6 | 8 | 15 | 13 | 0 | 12 | 16 | |
| G | 403 | G1-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS | 11 | 8 | 9 | 18 | 14 | 0 | 12 | 21 | |
| G | 404 | G2-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB. | 72 | 59 | 72 | 80 | 83 | 50 | 86 | 79 | |
| G | 405 | G2-02 DO YOU INSPECT TRANSISTORS | 62 | 48 | 63 | 67 | 69 | 0 | 69 | 74 | |
| G | 406 | G2-03 DO YOU REMOVE OR REPLACE TRANSISTORS | 59 | 48 | 60 | 63 | 70 | 50 | 71 | 68 | |
| G | 407 | G2-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT | 58 | 40 | 60 | 64 | 70 | 50 | 71 | 68 | TRANSISTORS |
| G | 408 | G2-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS | 51 | 38 | 51 | 58 | 69 | 50 | 67 | 74 | |
| G | 409 | G2-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS | 51 | 33 | 52 | 58 | 70 | 50 | 69 | 74 | |
| G | 410 | G2-07 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC) RESISTANCE MEASUREMENTS | 50 | 33 | 52 | 58 | 70 | 50 | 69 | 74 | |
| G | 411 | G2-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION | 12 | 11 | 12 | 10 | 17 | 0 | 20 | 11 | |
| G | 412 | G2-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION | 11 | 11 | 12 | 9 | 19 | 0 | 22 | 11 | |
| G | 413 | G2-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER) | 22 | 21 | 20 | 27 | 30 | 0 | 31 | 32 | |
| G | 414 | G2-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR | 9 | 11 | 8 | 11 | 13 | 0 | 12 | 16 | |
| G | 415 | G2-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS | 68 | 59 | 69 | 72 | 77 | 50 | 82 | 66 | |
| G | 416 | G2-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC | 67 | 59 | 68 | 71 | 77 | 50 | 80 | 74 | |
| G | 417 | G2-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION | 29 | 21 | 30 | 33 | 34 | 0 | 35 | 37 | |
| G | 418 | G2-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IB IS NORMALLY SIGNIFICANTLY | 18 | 16 | 18 | 19 | 26 | 0 | 27 | 26 | |
| G | 419 | G2-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR | 27 | 27 | 27 | 29 | 34 | 0 | 35 | 37 | |
| G | 420 | G2-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (ICBO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES | 14 | 14 | 12 | 19 | 19 | 0 | 16 | 26 | |
| G | 421 | G2-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES | 6 | 6 | 5 | 8 | 9 | 0 | 8 | 11 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| G 422 | G2-19 | DO YOU USE OR REFER TO BETA TRANSISTOR GAINS | 5 | 5 | 4 | 8 | 3 | 0 | 2 | 5 | |
| G 423 | G2-20 | DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS | 5 | 5 | 4 | 8 | 1 | 0 | 2 | 0 | |
| G 424 | G2-21 | DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS | 4 | 5 | 4 | 6 | 1 | 0 | 2 | 0 | |
| G 425 | G2-22 | DO YOU CALCULATE BETA TRANSISTOR GAINS | 1 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | |
| G 426 | G2-23 | DO YOU CALCULATE ALPHA TRANSISTOR GAINS | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | |
| G 427 | G2-24 | DO YOU CALCULATE GAMMA TRANSISTOR GAINS | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | |
| G 428 | G3-01 | DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB | 57 | 48 | 54 | 68 | 70 | 50 | 69 | 74 | |
| G 429 | G3-02 | DO YOU INSPECT TRANSISTOR AMPLIFIERS | 46 | 38 | 43 | 59 | 59 | 0 | 55 | 74 | |
| G 430 | G3-03 | DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS | 43 | 37 | 41 | 51 | 59 | 50 | 59 | 58 | |
| G 431 | G3-04 | DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL | 42 | 32 | 41 | 52 | 60 | 50 | 57 | 68 | TRANSISTOR AMPLIFIERS |
| G 432 | G3-05 | DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS | 32 | 22 | 32 | 41 | 54 | 0 | 53 | 63 | |
| G 433 | G3-06 | DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER | 48 | 44 | 44 | 58 | 59 | 50 | 57 | 63 | |
| G 434 | G3-07 | DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS | 31 | 22 | 30 | 37 | 50 | 0 | 49 | 58 | |
| G 435 | G3-08 | DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE | 17 | 16 | 17 | 17 | 30 | 0 | 37 | 16 | |
| G 436 | G3-09 | DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN | 6 | 6 | 6 | 6 | 10 | 0 | 12 | 5 | |
| G 437 | G3-10 | DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE | 16 | 13 | 17 | 16 | 29 | 0 | 37 | 11 | |
| G 438 | G3-11 | DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN | 6 | 6 | 5 | 7 | 7 | 0 | 8 | 5 | |
| G 439 | G3-12 | DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL | 14 | 13 | 15 | 14 | 27 | 0 | 31 | 21 | |
| G 440 | G3-13 | DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN | 5 | 5 | 4 | 8 | 6 | 0 | 6 | 5 | |
| G 441 | G3-14 | DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A | 1 | 3 | 1 | 1 | 3 | 0 | 4 | 0 | |
| G 442 | G3-15 | DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR | 8 | 8 | 7 | 10 | 14 | 0 | 14 | 16 | |
| G 443 | G3-16 | DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR | 2 | 5 | 2 | 2 | 3 | 0 | 4 | 0 | |
| G 444 | G3-17 | DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION | 22 | 11 | 21 | 30 | 41 | 0 | 43 | 42 | |
| G 445 | G3-18 | DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION | 15 | 10 | 15 | 18 | 29 | 0 | 29 | 32 | |
| G 446 | G3-19 | DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION | 15 | 8 | 15 | 19 | 30 | 0 | 31 | 32 | |
| G 447 | G3-20 | DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE | 2 | 2 | 2 | 3 | 6 | 0 | 6 | 5 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 |
|---|---|---|---|---|---|---|---|---|---|
| G 448 | G3-21 DO YOU CALCULATE THE CURRENT GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE | 2 | 2 | 2 | 1 | 4 | 0 | 4 | 5 |
| G 449 | G3-22 DO YOU CALCULATE THE POWER GAIN FOR A SPECIFIC TRANSISTOR USING A FORMULA THAT IS, DO YOU MULTIPLY THE | 2 | 2 | 2 | 1 | 4 | 0 | 4 | 5 |
| G 450 | G3-23 DO YOU NEED TO KNOW THAT MORE COLLECTOR CURRENT IS GENERATED WITH LESS COLLECTOR VOLTAGE AS TEMPERATURE | 8 | 6 | 9 | 8 | 14 | 0 | 14 | 16 |
| G 451 | G3-24 DO YOU COMPUTE THE STATIC OPERATING POINT (Q) OF A TRANSISTOR AT DIFFERENT TEMPERATURES | 1 | 2 | 1 | 0 | 1 | 0 | 2 | 0 |
| G 452 | G3-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH | 21 | 14 | 19 | 28 | 36 | 0 | 33 | 47 |
| G 453 | G3-26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF- | 19 | 14 | 16 | 27 | 29 | 0 | 24 | 42 |
| G 454 | G3-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH | 20 | 11 | 18 | 29 | 31 | 0 | 27 | 47 |
| G 455 | G3-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH | 21 | 14 | 19 | 29 | 36 | 0 | 33 | 47 |
| G 456 | G3-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH | 21 | 14 | 19 | 29 | 36 | 0 | 33 | 47 |
| G 457 | G3-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH | 17 | 13 | 15 | 22 | 27 | 0 | 22 | 42 |
| G 458 | G3-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER (SWAMPING) RESISTOR STABILIZATION | 25 | 16 | 24 | 32 | 37 | 0 | 35 | 47 |
| G 459 | G3-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION | 23 | 16 | 22 | 31 | 33 | 0 | 31 | 42 |
| G 460 | G3-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION | 23 | 16 | 19 | 34 | 30 | 0 | 22 | 53 |
| G 461 | G3-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION | 24 | 16 | 23 | 32 | 36 | 0 | 33 | 47 |
| G 462 | G3-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION | 25 | 16 | 23 | 32 | 36 | 0 | 33 | 47 |
| G 463 | G3-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION | 19 | 14 | 19 | 24 | 29 | 0 | 24 | 42 |
| G 464 | G3-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS | 26 | 16 | 25 | 33 | 37 | 0 | 39 | 37 |
| G 465 | G3-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION | 23 | 11 | 23 | 29 | 44 | 0 | 43 | 53 |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| G 466 | G3-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS | 25 | 21 | 25 | 28 | 40 | 50 | 41 | 37 | |
| G 467 | G3-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS | 18 | 16 | 17 | 22 | 31 | 0 | 33 | 32 | |
| G 468 | G3-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION | 14 | 10 | 14 | 17 | 29 | 0 | 31 | 26 | |
| G 469 | G3-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION | 20 | 13 | 20 | 23 | 36 | 0 | 41 | 26 | |
| G 470 | G3-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR | 9 | 8 | 9 | 10 | 16 | 0 | 18 | 11 | |
| G 471 | G3-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS | 13 | 13 | 12 | 16 | 20 | 0 | 20 | 21 | |
| G 472 | G3-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS | 14 | 14 | 11 | 23 | 20 | 0 | 20 | 21 | |
| G 473 | G3-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS | 29 | 17 | 27 | 39 | 44 | 0 | 45 | 47 | |
| G 474 | G3-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS | 15 | 11 | 13 | 21 | 17 | 0 | 12 | 32 | |
| G 475 | G3-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS | 19 | 13 | 17 | 26 | 31 | 0 | 31 | 37 | |
| G 476 | G3-49 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS | 25 | 16 | 23 | 37 | 43 | 0 | 41 | 53 | |
| H 477 | H1-01 DO YOU USE OR REFER TO VARACTORS | 16 | 11 | 14 | 25 | 29 | 0 | 14 | 53 | |
| H 478 | H1-02 DO YOU USE OR REFER TO TUNNEL DIODES | 36 | 25 | 33 | 51 | 33 | 0 | 29 | 47 | |
| H 479 | H1-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET) | 44 | 33 | 44 | 49 | 54 | 50 | 57 | 47 | SOLID-STATE |
| H 480 | H1-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS | 43 | 33 | 42 | 51 | 59 | 50 | 61 | 53 | SPECIAL PURPOSE |
| H 481 | H1-05 DO YOU USE OR REFER TO ZENER DIODES | 70 | 59 | 69 | 79 | 84 | 50 | 86 | 84 | DEVICES |
| H 482 | H1-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS | 82 | 73 | 83 | 88 | 86 | 50 | 90 | 79 | |
| H 483 | H2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES | 81 | 84 | 82 | 78 | 86 | 100 | 92 | 68 | |
| H 484 | H2-02 DO YOU INSPECT POWER SUPPLIES | 73 | 70 | 72 | 75 | 73 | 50 | 78 | 63 | |
| H 485 | H2-03 DO YOU CLEAN POWER SUPPLIES | 52 | 25 | 57 | 56 | 67 | 50 | 73 | 53 | |
| H 486 | H2-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES | 75 | 73 | 77 | 74 | 80 | 100 | 84 | 68 | |
| H 487 | H2-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL | 68 | 63 | 70 | 65 | 77 | 100 | 82 | 63 | POWER SUPPLIES |
| H 488 | H2-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS | 44 | 24 | 47 | 48 | 59 | 0 | 61 | 58 | |
| H 489 | H2-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES | 77 | 79 | 76 | 77 | 76 | 100 | 80 | 63 | |
| H 490 | H2-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS | 41 | 25 | 43 | 45 | 56 | 0 | 61 | 47 | |
| H 491 | H2-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS | 48 | 41 | 48 | 53 | 57 | 0 | 57 | 63 | |
| H 492 | H2-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS | 50 | 46 | 50 | 53 | 56 | 0 | 59 | 53 | |
| H 493 | H2-11 DO YOU WORK WITH BRIDGE RECTIFIERS | 53 | 51 | 52 | 56 | 56 | 0 | 57 | 58 | |
| H 494 | H2-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS | 37 | 30 | 38 | 40 | 40 | 0 | 39 | 47 | |
| H 495 | H2-13 DO YOU USE OR REFER TO INPUT VOLTAGE | 64 | 63 | 65 | 61 | 73 | 0 | 80 | 63 | |
| H 496 | H2-14 DO YOU USE OR REFER TO INPUT FREQUENCY | 49 | 54 | 49 | 45 | 56 | 0 | 59 | 53 | |
| H 497 | H2-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE | 54 | 56 | 56 | 48 | 57 | 0 | 65 | 42 | |
| H 498 | H2-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE | 51 | 46 | 53 | 49 | 60 | 0 | 67 | 47 | |
| H 499 | H2-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE | 45 | 41 | 42 | 56 | 43 | 0 | 41 | 53 | |
| H 500 | H2-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY | 35 | 30 | 32 | 43 | 39 | 0 | 37 | 47 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| 501 | H2-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE | 23 | 19 | 23 | 25 | 31 | 0 | 33 | 32 | |
| 502 | H2-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS | 57 | 57 | 60 | 51 | 61 | 0 | 69 | 47 | |
| 503 | H2-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE | 51 | 49 | 51 | 54 | 61 | 50 | 65 | 53 | |
| 504 | H2-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS | 46 | 33 | 47 | 52 | 50 | 0 | 51 | 53 | |
| 505 | H2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS | 43 | 30 | 44 | 48 | 49 | 0 | 51 | 47 | |
| 506 | H2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS | 37 | 29 | 36 | 43 | 37 | 0 | 37 | 42 | |
| 507 | H2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS | 35 | 27 | 34 | 41 | 37 | 0 | 37 | 42 | |
| 508 | H2-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS | 35 | 21 | 36 | 42 | 36 | 0 | 35 | 42 | |
| 509 | H2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS | 35 | 22 | 35 | 42 | 37 | 0 | 37 | 42 | |
| 510 | H2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY DON'T REMEMBER WHICH TYPE OF FILTER | 38 | 44 | 41 | 25 | 43 | 50 | 51 | 21 | |
| 511 | H2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER | 2 | 0 | 2 | 2 | 4 | 0 | 4 | 5 | |
| 512 | H3-01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB | 54 | 51 | 51 | 60 | 66 | 100 | 65 | 63 | |
| 513 | H3-02 DO YOU INSPECT OSCILLATORS | 44 | 35 | 42 | 53 | 54 | 0 | 55 | 58 | |
| 514 | H3-03 DO YOU ALIGN OR ADJUST OSCILLATORS | 44 | 44 | 40 | 54 | 60 | 100 | 57 | 63 | |
| 515 | H3-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS | 45 | 46 | 42 | 52 | 54 | 100 | 53 | 53 | |
| 516 | H3-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS | 18 | 11 | 18 | 23 | 41 | 0 | 39 | 53 | OSCILLATORS |
| 517 | H3-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL | 42 | 35 | 40 | 50 | 54 | 100 | 51 | 58 | |
| 518 | H3-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS | 19 | 10 | 18 | 26 | 40 | 0 | 35 | 58 | |
| 519 | H3-08 DO YOU USE OR REFER TO FEEDBACK | 33 | 27 | 32 | 41 | 49 | 0 | 47 | 58 | |
| 520 | H3-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD) | 30 | 27 | 26 | 40 | 40 | 0 | 37 | 53 | |
| 521 | H3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY | 30 | 25 | 30 | 32 | 43 | 0 | 47 | 37 | |
| 522 | H3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY | 36 | 32 | 33 | 44 | 51 | 50 | 51 | 53 | |
| 523 | H3-12 DO YOU USE OR REFER TO DAMPING | 22 | 19 | 19 | 30 | 34 | 0 | 31 | 47 | |
| 524 | H3-13 DO YOU USE OR REFER TO REGENERATIVE FEEDBACK | 27 | 22 | 24 | 35 | 43 | 0 | 41 | 53 | |
| 525 | H3-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT | 10 | 13 | 9 | 12 | 20 | 0 | 16 | 32 | |
| 526 | H3-15 DO YOU USE OR REFER TO CRITICAL DAMPING | 9 | 11 | 8 | 10 | 14 | 0 | 14 | 16 | |
| 527 | H3-16 DO YOU USE OR REFER TO UNDER DAMPING | 9 | 11 | 7 | 14 | 13 | 0 | 12 | 16 | |
| 528 | H3-17 DO YOU USE OR REFER TO OVER DAMPING | 10 | 11 | 7 | 15 | 13 | 0 | 12 | 16 | |
| 529 | H3-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK CIRCUITS AS FDD | 26 | 19 | 26 | 30 | 40 | 0 | 39 | 47 | |
| 530 | H3-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS FDD | 30 | 22 | 30 | 35 | 47 | 0 | 47 | 53 | |
| 531 | H3-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS FDD | 32 | 22 | 32 | 40 | 50 | 50 | 49 | 53 | |
| 532 | H3-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD | 17 | 21 | 18 | 14 | 19 | 50 | 20 | 11 | |
| 533 | H3-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS | 17 | 19 | 14 | 23 | 29 | 0 | 22 | 47 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | DY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M | 534 | M3-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS | 17 | 19 | 13 | 25 | 26 | 0 | 18 | 47 | |
| M | 535 | M3-24 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS | 19 | 16 | 17 | 25 | 33 | 50 | 29 | 42 | |
| M | 536 | M3-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS | 9 | 5 | 7 | 14 | 14 | 0 | 10 | 26 | |
| M | 537 | M3-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS | 8 | 6 | 7 | 11 | 17 | 0 | 12 | 32 | |
| M | 538 | M3-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF OSCILLATORS | 26 | 24 | 28 | 23 | 29 | 50 | 31 | 21 | |
| I | 539 | I1-01 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB | 38 | 46 | 32 | 47 | 39 | 50 | 37 | 42 | |
| I | 540 | I1-02 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS | 29 | 32 | 24 | 39 | 27 | 0 | 22 | 42 | |
| I | 541 | I1-03 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS | 29 | 29 | 25 | 38 | 30 | 50 | 24 | 42 | |
| I | 542 | I1-04 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS | 21 | 17 | 18 | 32 | 24 | 0 | 20 | 37 | MULTIVIBRATORS |
| I | 543 | I1-05 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS | 27 | 27 | 23 | 39 | 29 | 0 | 22 | 47 | |
| I | 544 | I1-06 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS | 17 | 13 | 16 | 22 | 26 | 0 | 22 | 37 | |
| I | 545 | I1-07 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS | 29 | 38 | 24 | 35 | 29 | 50 | 22 | 42 | |
| I | 546 | I1-08 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING COMPONENTS | 14 | 8 | 13 | 18 | 24 | 0 | 20 | 37 | |
| I | 547 | I1-09 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUITS | 18 | 13 | 15 | 25 | 21 | 50 | 14 | 37 | |
| I | 548 | I1-10 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC NETWORKS | 20 | 17 | 17 | 27 | 20 | 0 | 18 | 26 | |
| I | 549 | I1-11 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN CRYSTALS | 18 | 13 | 17 | 25 | 21 | 0 | 18 | 32 | |
| I | 550 | I1-12 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T REMEMBER WHICH TYPE OF FDD | 16 | 25 | 15 | 15 | 11 | 0 | 12 | 11 | |
| I | 551 | I1-13 DO YOU WORK WITH ASTABLE MULTIVIBRATORS | 22 | 22 | 18 | 32 | 23 | 50 | 16 | 37 | |
| I | 552 | I1-14 DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS | 24 | 19 | 19 | 37 | 29 | 0 | 22 | 47 | |
| I | 553 | I1-15 DO YOU WORK WITH BISTABLE MULTIVIBRATORS | 24 | 22 | 19 | 38 | 29 | 0 | 22 | 47 | |
| I | 554 | I1-16 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE MULTIVIBRATORS | 13 | 21 | 15 | 6 | 11 | 0 | 16 | 0 | |
| I | 555 | I2-01 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB | 31 | 29 | 26 | 43 | 46 | 0 | 43 | 58 | |
| I | 556 | I2-02 DO YOU WORK WITH SERIES DIODE LIMITERS | 18 | 10 | 15 | 30 | 23 | 0 | 20 | 32 | |
| I | 557 | I2-03 DO YOU WORK WITH SHUNT DIODE LIMITERS | 16 | 10 | 13 | 27 | 26 | 0 | 22 | 37 | LIMITERS AND CLAMPERS |
| I | 558 | I2-04 DO YOU WORK WITH LIMITERS WITH BIAS | 15 | 10 | 13 | 23 | 29 | 0 | 27 | 37 | |
| I | 559 | I2-05 DO YOU WORK WITH ZENER DIODE LIMITERS | 21 | 11 | 18 | 32 | 30 | 0 | 27 | 42 | |
| I | 560 | I2-06 DO YOU WORK WITH TRANSISTOR LIMITERS | 17 | 10 | 15 | 27 | 26 | 0 | 22 | 37 | |
| I | 561 | I2-07 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS | 14 | 21 | 11 | 15 | 17 | 0 | 16 | 21 | |
| I | 562 | I2-08 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS | 16 | 6 | 13 | 28 | 21 | 0 | 16 | 37 | |
| I | 563 | I2-09 DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS | 14 | 6 | 11 | 25 | 24 | 0 | 20 | 37 | |
| I | 564 | I2-10 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING CIRCUIT | 16 | 19 | 19 | 19 | 23 | 0 | 22 | 26 | |
| I | 565 | I3-01 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS ELECTRON TUBES | 25 | 21 | 29 | 31 | 56 | 0 | 57 | 58 | |
| I | 566 | I3-02 DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD | 20 | 14 | 21 | 21 | 41 | 0 | 47 | 32 | ELECTRON TUBES |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 |
|---|---|---|---|---|---|---|---|---|---|
| 567 | 13-03 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES | 6 | 5 | 5 | 9 | 17 | 0 | 18 | 16 |
| 568 | 13-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES | 13 | 10 | 14 | 15 | 29 | 0 | 33 | 21 |
| 569 | 13-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES | 14 | 14 | 13 | 17 | 31 | 0 | 33 | 32 |
| 570 | 13-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES | 20 | 17 | 18 | 27 | 47 | 0 | 46 | 58 |
| 571 | 13-07 DO YOU USE OR REFER TO CUTOFF | 9 | 13 | 8 | 11 | 24 | 0 | 24 | 26 |
| 572 | 13-08 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING | 3 | 6 | 2 | 3 | 6 | 0 | 8 | 0 |
| 573 | 13-09 DO YOU USE OR REFER TO PEAK CURRENT RATING | 3 | 6 | 3 | 3 | 7 | 0 | 10 | 0 |
| 574 | 13-10 DO YOU USE OR REFER TO TRANSIT TIME | 3 | 5 | 2 | 3 | 3 | 0 | 4 | 0 |
| 575 | 13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING | 3 | 5 | 3 | 2 | 9 | 0 | 12 | 0 |
| 576 | 13-12 DO YOU USE OR REFER TO SATURATION | 8 | 11 | 7 | 9 | 21 | 0 | 24 | 16 |
| 577 | 13-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE | 5 | 8 | 4 | 3 | 10 | 0 | 14 | 0 |
| 578 | 13-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE RESISTANCE FOR ELECTRON TUBES | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 |
| 579 | 13-15 DO YOU USE OR REFER TO PLATE VOLTAGE | 17 | 11 | 16 | 22 | 47 | 0 | 47 | 53 |
| 580 | 13-16 DO YOU USE OR REFER TO PLATE CURRENT | 13 | 11 | 12 | 17 | 39 | 0 | 39 | 42 |
| 581 | 13-17 DO YOU USE OR REFER TO GRID VOLTAGE | 17 | 13 | 16 | 24 | 46 | 0 | 45 | 53 |
| 582 | 13-18 DO YOU USE OR REFER TO GRID CURRENT | 13 | 13 | 12 | 17 | 36 | 0 | 39 | 32 |
| 583 | 13-19 DO YOU USE OR REFER TO CATHODE VOLTAGE | 17 | 14 | 16 | 23 | 44 | 0 | 45 | 47 |
| 584 | 13-20 DO YOU USE OR REFER TO CATHODE CURRENT | 14 | 14 | 12 | 17 | 36 | 0 | 39 | 32 |
| 585 | 13-21 DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS | 4 | 2 | 4 | 7 | 7 | 0 | 6 | 11 |
| 586 | 13-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE AMPLIFICATION FACTORS | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 |
| 587 | 13-23 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC) AMPLIFICATION FACTORS | 3 | 3 | 2 | 4 | 4 | 0 | 6 | 0 |
| 588 | 13-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSCONDUCTANCE (G, WHICH IS MEASURED IN MHOS) | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 |
| 589 | 13-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE TRANSCONDUCTANCES | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| 590 | 13-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| 591 | 13-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE RESISTANCE | 1 | 3 | 0 | 0 | 1 | 0 | 2 | 0 |
| 592 | 13-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE | 4 | 5 | 2 | 7 | 9 | 0 | 6 | 16 |
| 593 | 13-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES | 1 | 2 | 2 | 1 | 4 | 0 | 6 | 0 |
| 594 | 13-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE VOLTAGE FOR A SPECIFIED BIAS | 1 | 2 | 1 | 1 | 3 | 0 | 4 | 0 |
| 595 | 13-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS | 1 | 3 | 1 | 1 | 3 | 0 | 4 | 0 |
| 596 | 13-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF | 2 | 3 | 1 | 2 | 4 | 0 | 6 | 0 |
| 597 | 13-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION | 1 | 3 | 1 | 1 | 4 | 0 | 6 | 0 |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | DY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| I | 598 | I3-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN | 10 | 10 | 11 | 8 | 30 | 0 | 37 | 16 | |
| I | 599 | I3-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY | 6 | 8 | 6 | 4 | 16 | 0 | 20 | 5 | |
| I | 600 | I3-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN | 5 | 5 | 4 | 7 | 13 | 0 | 14 | 11 | |
| I | 601 | I3-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN | 8 | 8 | 8 | 9 | 20 | 0 | 24 | 11 | |
| I | 602 | I3-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN | 12 | 10 | 11 | 15 | 29 | 0 | 33 | 21 | |
| I | 603 | I3-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN | 3 | 3 | 3 | 2 | 10 | 0 | 12 | 5 | |
| I | 604 | I3-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | |
| I | 605 | I3-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION | 14 | 6 | 13 | 22 | 31 | 0 | 29 | 42 | |
| I | 606 | I3-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS | 18 | 11 | 17 | 23 | 37 | 0 | 35 | 47 | |
| I | 607 | I3-43 DO YOU USE OR REFER TO THE TYPE OF MATERIAL OR THE OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE | 2 | 2 | 2 | 1 | 4 | 0 | 6 | 0 | |
| I | 608 | I3-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS | 6 | 3 | 4 | 10 | 11 | 0 | 8 | 21 | |
| J | 609 | J1-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB | 17 | 11 | 17 | 22 | 49 | 0 | 47 | 58 | |
| J | 610 | J1-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER | 2 | 2 | 2 | 3 | 7 | 0 | 8 | 5 | |
| J | 611 | J1-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS | 3 | 3 | 2 | 7 | 11 | 0 | 10 | 16 | ELECTRON TUBE AMPLIFIERS AND CIRCUITS |
| J | 612 | J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS | 6 | 5 | 5 | 10 | 21 | 0 | 18 | 32 | |
| J | 613 | J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS | 5 | 3 | 4 | 9 | 17 | 0 | 14 | 26 | |
| J | 614 | J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS | 6 | 3 | 6 | 10 | 24 | 0 | 20 | 37 | |
| J | 615 | J1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER | 8 | 8 | 8 | 8 | 23 | 0 | 24 | 21 | |
| J | 616 | J2-01 DO YOU WORK WITH GAS TUBES (HOT CATHODE OR COLD CATHODE) | 9 | 5 | 8 | 13 | 21 | 0 | 18 | 32 | |
| J | 617 | J2-02 DO YOU WORK WITH CATHODE-RAY TUBES | 28 | 30 | 26 | 30 | 26 | 0 | 27 | 26 | |
| J | 618 | J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES | 4 | 6 | 4 | 2 | 6 | 0 | 6 | 5 | SPECIAL PURPOSE ELECTRON TUBES |
| J | 619 | J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED | 6 | 5 | 5 | 7 | 9 | 0 | 6 | 16 | |
| J | 620 | J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYRATRONS | 2 | 2 | 2 | 4 | 3 | 0 | 0 | 11 | |
| J | 621 | J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATRONS ARE USED | 3 | 3 | 2 | 6 | 4 | 0 | 2 | 11 | |
| J | 622 | J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT) | 15 | 16 | 13 | 19 | 10 | 0 | 10 | 11 | |
| J | 623 | J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES | 19 | 13 | 13 | 17 | 9 | 0 | 8 | 11 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| J 624 | J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES | 10 | 3 | 9 | 15 | 7 | 0 | 6 | 11 | |
| J 625 | J2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS | 17 | 17 | 15 | 19 | 9 | 0 | 8 | 11 | |
| J 626 | J2-11 DO YOU USE OR REFER TO AQUADAG COATINGS | 10 | 13 | 8 | 14 | 4 | 0 | 2 | 11 | |
| J 627 | J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS | 8 | 11 | 6 | 8 | 3 | 0 | 2 | 5 | |
| J 628 | J2-13 DO YOU USE OR REFER TO PERSISTENCE | 11 | 6 | 10 | 17 | 7 | 0 | 4 | 16 | |
| J 629 | J2-14 DO YOU USE OR REFER TO DECAY TIMES | 11 | 16 | 10 | 10 | 3 | 0 | 2 | 5 | |
| J 630 | J2-15 DO YOU USE OR REFER TO FLUORESCENCE | 9 | 10 | 8 | 9 | 3 | 0 | 2 | 5 | |
| J 631 | J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE | 9 | 11 | 9 | 9 | 3 | 0 | 2 | 5 | |
| J 632 | J3-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB | 63 | 63 | 62 | 64 | 83 | 100 | 88 | 66 | |
| J 633 | J3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS | 41 | 35 | 43 | 38 | 69 | 50 | 78 | 47 | HETERODYNING, MODULATION, AND DEMODULATION |
| J 634 | J3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS | 44 | 38 | 45 | 45 | 71 | 50 | 80 | 53 | |
| J 635 | J3-04 DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS | 30 | 25 | 31 | 32 | 53 | 0 | 55 | 53 | |
| J 636 | J3-05 DO YOU PERFORM TASKS ON REACTANCE MODULATORS | 18 | 16 | 18 | 17 | 23 | 0 | 24 | 21 | |
| J 637 | J3-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS | 33 | 37 | 32 | 33 | 47 | 0 | 49 | 47 | |
| K 638 | K1-01 DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB | 26 | 17 | 25 | 32 | 69 | 0 | 71 | 68 | |
| K 639 | K1-02 DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS | 23 | 16 | 21 | 29 | 59 | 0 | 59 | 63 | |
| K 640 | K1-03 DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS | 19 | 11 | 17 | 27 | 53 | 0 | 55 | 53 | AM SYSTEMS |
| K 641 | K1-04 DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS | 23 | 16 | 21 | 30 | 63 | 0 | 63 | 68 | |
| K 642 | K1-05 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS | 21 | 16 | 19 | 28 | 59 | 0 | 59 | 63 | |
| K 643 | K1-06 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS | 19 | 11 | 17 | 26 | 56 | 0 | 55 | 63 | |
| K 644 | K1-07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS | 20 | 14 | 20 | 25 | 56 | 0 | 61 | 47 | |
| K 645 | K1-08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS | 18 | 10 | 17 | 25 | 54 | 0 | 55 | 58 | |
| K 646 | K1-09 DO YOU PERFORM TASKS ON RF OSCILLATORS | 19 | 10 | 19 | 25 | 51 | 0 | 55 | 47 | |
| K 647 | K1-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS | 20 | 11 | 19 | 28 | 60 | 0 | 61 | 63 | |
| K 648 | K1-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS | 18 | 8 | 17 | 25 | 50 | 0 | 61 | 63 | |
| K 649 | K1-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS | 20 | 11 | 19 | 28 | 60 | 0 | 61 | 63 | |
| K 650 | K1-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS | 19 | 10 | 19 | 24 | 56 | 0 | 59 | 53 | |
| K 651 | K1-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS | 20 | 10 | 20 | 26 | 60 | 0 | 61 | 63 | |
| K 652 | K1-15 DO YOU PERFORM TASKS ON DETECTORS | 20 | 13 | 19 | 26 | 53 | 0 | 55 | 53 | |
| K 653 | K1-16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE | 6 | 6 | 6 | 7 | 13 | 0 | 16 | 5 | |
| K 654 | K1-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS | 12 | 8 | 11 | 17 | 33 | 0 | 35 | 32 | |
| K 655 | K1-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS | 16 | 11 | 14 | 23 | 41 | 0 | 43 | 42 | |
| K 656 | K1-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS | 23 | 14 | 22 | 29 | 64 | 0 | 65 | 68 | |
| K 657 | K1-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS | 20 | 13 | 19 | 25 | 57 | 0 | 61 | 53 | |
| K 658 | K1-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION | 9 | 2 | 7 | 16 | 27 | 0 | 24 | 37 | |
| K 659 | K1-22 DO YOU USE OR REFER TO BANDPASS DISTORTION | 11 | 3 | 11 | 15 | 36 | 0 | 35 | 42 | |
| K 660 | K1-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION | 2 | 0 | 1 | 5 | 7 | 0 | 2 | 21 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| K 661 | K1-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE | 8 | 3 | 6 | 15 | 23 | 0 | 20 | 32 | |
| K 662 | K1-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS | 7 | 0 | 6 | 12 | 24 | 0 | 20 | 37 | |
| K 663 | K1-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR IMAGE REJECTION RATIOS | 7 | 0 | 6 | 13 | 21 | 0 | 18 | 32 | |
| K 664 | K1-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM TRANSMITTER SCHEMATIC DIAGRAMS | 21 | 13 | 21 | 26 | 61 | 0 | 63 | 63 | |
| K 665 | K1-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM RECEIVER SCHEMATIC DIAGRAMS | 21 | 11 | 21 | 28 | 61 | 0 | 63 | 63 | |
| K 666 | K2-01 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB | 29 | 29 | 22 | 25 | 37 | 50 | 45 | 16 | |
| K 667 | K2-02 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS | 21 | 24 | 19 | 25 | 33 | 0 | 43 | 11 | |
| K 668 | K2-03 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS | 16 | 17 | 13 | 21 | 29 | 0 | 37 | 11 | |
| K 669 | K2-04 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS | 21 | 25 | 17 | 25 | 34 | 50 | 43 | 11 | FM SYSTEMS |
| K 670 | K2-05 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS | 19 | 25 | 17 | 22 | 31 | 50 | 39 | 11 | |
| K 671 | K2-06 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS | 16 | 14 | 14 | 21 | 27 | 0 | 35 | 11 | |
| K 672 | K2-07 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS | 18 | 25 | 16 | 18 | 30 | 50 | 37 | 11 | |
| K 673 | K2-08 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS | 15 | 17 | 14 | 15 | 30 | 0 | 39 | 11 | |
| K 674 | K2-09 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS | 13 | 17 | 11 | 16 | 31 | 50 | 39 | 11 | |
| K 675 | K2-10 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS | 13 | 14 | 12 | 16 | 27 | 0 | 35 | 11 | |
| K 676 | K2-11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS) | 15 | 17 | 13 | 18 | 26 | 50 | 31 | 11 | |
| K 677 | K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS | 18 | 24 | 15 | 19 | 31 | 50 | 39 | 11 | |
| K 678 | K2-13 DO YOU PERFORM TASKS ON RF AMPLIFIERS | 18 | 22 | 15 | 21 | 31 | 50 | 39 | 11 | |
| K 679 | K2-14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS | 14 | 19 | 13 | 16 | 29 | 50 | 35 | 11 | |
| K 680 | K2-15 DO YOU PERFORM TASKS ON IF AMPLIFIERS | 17 | 22 | 15 | 19 | 31 | 50 | 39 | 11 | |
| K 681 | K2-16 DO YOU PERFORM TASKS ON LIMITERS | 12 | 11 | 11 | 15 | 27 | 0 | 35 | 11 | |
| K 682 | K2-17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS | 14 | 19 | 12 | 15 | 27 | 50 | 33 | 11 | |
| K 683 | K2-18 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS | 19 | 22 | 17 | 21 | 31 | 0 | 41 | 11 | |
| K 684 | K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS | 18 | 21 | 16 | 20 | 30 | 0 | 39 | 11 | |
| K 685 | K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS | 15 | 16 | 13 | 19 | 6 | 0 | 6 | 5 | |
| K 686 | K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS | 27 | 19 | 27 | 30 | 27 | 0 | 27 | 32 | |
| K 687 | K3-03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS | 13 | 16 | 12 | 15 | 4 | 0 | 4 | 5 | NUMBERING SYSTEMS |
| K 688 | K3-04 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS | 14 | 14 | 13 | 17 | 7 | 0 | 8 | 5 | |
| K 689 | K3-05 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS | 27 | 17 | 28 | 28 | 27 | 0 | 27 | 32 | |
| K 690 | K3-06 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS | 14 | 13 | 13 | 17 | 7 | 0 | 8 | 5 | |
| K 691 | K3-07 DO YOU ADD BINARY NUMBERS TO GET A SUM | 21 | 14 | 23 | 22 | 21 | 0 | 24 | 16 | |
| K 692 | K3-08 DO YOU SUBRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD | 9 | 3 | 10 | 11 | 6 | 0 | 8 | 0 | |
| K 693 | K3-09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD | 14 | 8 | 15 | 16 | 10 | 0 | 10 | 11 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| K 694 | K3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM | 8 | 8 | 8 | 9 | 4 | 0 | 4 | 5 | |
| L 695 | L1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS | 41 | 37 | 39 | 47 | 36 | 50 | 33 | 42 | |
| L 696 | L1-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES | 16 | 13 | 17 | 15 | 10 | 0 | 12 | 5 | |
| L 697 | L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES | 16 | 13 | 17 | 15 | 10 | 0 | 12 | 5 | LOGIC FUNCTIONS |
| L 698 | L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS | 16 | 13 | 17 | 15 | 10 | 0 | 12 | 5 | |
| L 699 | L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES | 15 | 13 | 16 | 15 | 9 | 0 | 10 | 5 | |
| L 700 | L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES | 26 | 25 | 26 | 28 | 20 | 0 | 18 | 26 | |
| L 701 | K1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES | 26 | 27 | 26 | 27 | 20 | 0 | 18 | 26 | |
| L 702 | K1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS | 25 | 24 | 25 | 27 | 20 | 0 | 18 | 26 | |
| L 703 | L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS | 25 | 29 | 24 | 25 | 19 | 0 | 18 | 21 | |
| L 704 | L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES | 38 | 35 | 38 | 41 | 33 | 50 | 33 | 32 | |
| L 705 | L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES | 38 | 35 | 38 | 41 | 33 | 50 | 33 | 32 | |
| L 706 | L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES | 38 | 35 | 38 | 40 | 33 | 50 | 33 | 32 | |
| L 707 | L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES | 36 | 35 | 36 | 38 | 29 | 50 | 29 | 26 | |
| L 708 | L2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC | 11 | 6 | 11 | 15 | 13 | 0 | 10 | 21 | |
| L 709 | L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS | 6 | 2 | 7 | 5 | 6 | 0 | 8 | 0 | |
| L 710 | L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS | 3 | 3 | 4 | 3 | 3 | 0 | 4 | 0 | BOOLEAN EQUATIONS |
| L 711 | L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS | 6 | 13 | 6 | 4 | 3 | 0 | 4 | 0 | |
| L 712 | L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES | 21 | 16 | 22 | 24 | 21 | 0 | 22 | 21 | |
| L 713 | L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS | 9 | 11 | 9 | 9 | 6 | 0 | 8 | 0 | |
| L 714 | L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA | 12 | 16 | 9 | 14 | 7 | 0 | 8 | 5 | |
| L 715 | L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES | 13 | 8 | 12 | 18 | 19 | 0 | 18 | 21 | |
| L 716 | L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS | 7 | 6 | 5 | 10 | 7 | 0 | 4 | 16 | |
| L 717 | L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE | 25 | 22 | 23 | 29 | 27 | 50 | 29 | 21 | |
| L 718 | L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS | 6 | 8 | 4 | 8 | 6 | 0 | 6 | 5 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| L 719 | L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS | 11 | 11 | 11 | 13 | 13 | 0 | 10 | 21 | |
| L 720 | L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS | 20 | 19 | 19 | 22 | 21 | 0 | 22 | 21 | |
| L 721 | L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS | 24 | 25 | 23 | 25 | 26 | 0 | 29 | 21 | |
| L 722 | L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS | 22 | 19 | 22 | 25 | 26 | 0 | 29 | 21 | |
| L 723 | L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS | 22 | 22 | 21 | 25 | 20 | 0 | 22 | 16 | |
| L 724 | L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS | 21 | 19 | 21 | 24 | 20 | 0 | 22 | 16 | |
| L 725 | L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS | 21 | 17 | 21 | 25 | 21 | 0 | 22 | 21 | |
| L 726 | L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES | 14 | 16 | 13 | 15 | 13 | 0 | 14 | 11 | |
| L 727 | L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS | 13 | 14 | 12 | 15 | 13 | 0 | 12 | 16 | |
| L 728 | L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS | 13 | 14 | 12 | 17 | 13 | 0 | 12 | 16 | |
| L 729 | L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS | 23 | 22 | 21 | 26 | 23 | 50 | 22 | 21 | |
| L 730 | L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS | 16 | 19 | 14 | 17 | 14 | 0 | 14 | 16 | |
| L 731 | L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS | 15 | 19 | 13 | 18 | 14 | 0 | 14 | 16 | |
| L 732 | L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS | 5 | 6 | 5 | 4 | 7 | 0 | 8 | 5 | |
| L 733 | L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB | 36 | 33 | 33 | 46 | 41 | 100 | 31 | 63 | |
| L 734 | L3-02 DO YOU USE OR REFER TO UP-COUNTERS | 29 | 24 | 26 | 38 | 27 | 100 | 20 | 37 | |
| L 735 | L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS | 26 | 19 | 24 | 34 | 20 | 0 | 16 | 32 | |
| L 736 | L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS | 18 | 17 | 16 | 24 | 14 | 50 | 14 | 11 | |
| L 737 | L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS | 17 | 13 | 15 | 24 | 10 | 0 | 10 | 11 | |
| L 738 | L3-06 DO YOU USE OR REFER TO RING COUNTERS | 7 | 6 | 7 | 7 | 4 | 0 | 4 | 5 | COUNTERS |
| L 739 | L3-07 DO YOU USE OR REFER TO DECADE COUNTERS | 17 | 14 | 17 | 19 | 11 | 0 | 10 | 16 | |
| L 740 | L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS | 18 | 17 | 15 | 25 | 13 | 50 | 10 | 16 | |
| L 741 | L3-09 DO YOU USE OR REFER TO DOWN CLOCKS | 21 | 17 | 19 | 27 | 20 | 50 | 16 | 26 | |
| L 742 | L3-10 DO YOU USE OR REFER TO UP CLOCKS | 22 | 22 | 20 | 26 | 20 | 50 | 18 | 21 | |
| L 743 | L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS | 14 | 13 | 13 | 18 | 16 | 50 | 10 | 26 | |
| L 744 | L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP- | 12 | 11 | 10 | 16 | 13 | 0 | 10 | 21 | |
| L 745 | L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS | 12 | 8 | 11 | 17 | 10 | 0 | 6 | 21 | |
| L 746 | L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS | 5 | 3 | 5 | 4 | 3 | 0 | 2 | 5 | |
| L 747 | L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER | 12 | 10 | 10 | 18 | 10 | 0 | 6 | 21 | |
| L 748 | L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS | 15 | 10 | 13 | 25 | 14 | 0 | 12 | 21 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| L 749 | L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS | 14 | 8 | 12 | 22 | 16 | 0 | 12 | 26 | |
| L 750 | L3-18 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS | 9 | 11 | 8 | 10 | 9 | 0 | 6 | 16 | |
| L 751 | L3-19 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENT- | 8 | 11 | 6 | 9 | 4 | 0 | 4 | 5 | |
| L 752 | L3-20 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE | 6 | 6 | 5 | 9 | 4 | 0 | 2 | 11 | |
| L 753 | L3-21 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS | 8 | 8 | 6 | 11 | 6 | 0 | 4 | 11 | |
| L 754 | L3-22 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS | 2 | 3 | 3 | 1 | 1 | 0 | 2 | 0 | |
| L 755 | L3-23 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES | 4 | 2 | 4 | 3 | 3 | 0 | 4 | 0 | |
| L 756 | L3-24 DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT | 9 | 8 | 8 | 12 | 11 | 0 | 8 | 21 | |
| M 757 | M1-01 DO YOU WORK WITH SAWTOOTH WAVE GENERATORS | 50 | 51 | 50 | 49 | 53 | 0 | 59 | 42 | |
| M 758 | M1-02 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS | 24 | 24 | 26 | 22 | 26 | 0 | 29 | 21 | |
| M 759 | M1-03 DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK | 31 | 32 | 31 | 28 | 39 | 0 | 41 | 37 | TIMING CIRCUITS |
| M 760 | M1-04 DO YOU WORK WITH PULSED OSCILLATORS WITHOUT REGENERATIVE FEEDBACK | 25 | 24 | 28 | 20 | 26 | 0 | 27 | 26 | |
| M 761 | M1-05 DO YOU WORK WITH BLOCKING OSCILLATORS | 32 | 35 | 32 | 30 | 43 | 0 | 47 | 37 | |
| M 762 | M1-06 DO YOU USE OR REFER TO RISE TIME | 72 | 65 | 75 | 68 | 64 | 50 | 69 | 53 | |
| M 763 | M1-07 DO YOU USE OR REFER TO FALL OR FLYBACK TIME | 64 | 57 | 70 | 57 | 57 | 50 | 61 | 47 | |
| M 764 | M1-08 DO YOU USE OR REFER TO SWEEP TIME | 69 | 67 | 70 | 66 | 54 | 0 | 57 | 53 | |
| M 765 | M1-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS | 46 | 44 | 45 | 51 | 33 | 0 | 33 | 37 | |
| M 766 | M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS | 47 | 46 | 47 | 46 | 37 | 0 | 43 | 26 | |
| M 767 | M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS | 38 | 35 | 36 | 47 | 27 | 0 | 27 | 32 | |
| M 768 | M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS | 38 | 35 | 38 | 38 | 34 | 0 | 35 | 37 | |
| M 769 | M2-01 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB | 57 | 60 | 57 | 57 | 84 | 100 | 86 | 79 | |
| M 770 | M2-02 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS | 48 | 54 | 44 | 53 | 71 | 100 | 69 | 74 | |
| M 771 | M2-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL | 25 | 32 | 23 | 27 | 40 | 0 | 41 | 42 | USE OF SIGNAL GENERATORS |
| M 772 | M2-04 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS | 30 | 37 | 28 | 33 | 39 | 50 | 39 | 37 | |
| M 773 | M2-05 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS | 13 | 6 | 13 | 15 | 24 | 0 | 22 | 32 | |
| M 774 | M2-06 DO YOU USE AUDIO SINE-WAVE GENERATORS | 29 | 24 | 29 | 33 | 66 | 50 | 67 | 63 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | Qy-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| W 775 | M2-07 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE | 30 | 32 | 28 | 32 | 46 | 100 | 43 | 47 | |
| W 776 | M2-08 DO YOU USE RF GENERATORS LESS THAN 1,000 MH | 30 | 24 | 32 | 30 | 66 | 50 | 67 | 63 | |
| W 777 | M2-09 DO YOU USE RF GENERATORS GREATER THAN 1,000 MH | 44 | 48 | 43 | 42 | 59 | 100 | 61 | 47 | |
| W 778 | M2-10 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS | 41 | 38 | 40 | 42 | 57 | 50 | 57 | 58 | |
| W 779 | M3-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR | 31 | 21 | 31 | 36 | 46 | 0 | 49 | 42 | |
| W 780 | M3-02 DO YOU INSPECT MOTORS | 27 | 16 | 27 | 34 | 40 | 0 | 43 | 37 | |
| W 781 | M3-03 DO YOU CLEAN OR LUBRICATE MOTORS | 18 | 10 | 18 | 21 | 34 | 0 | 39 | 26 | |
| W 782 | M3-04 DO YOU OPERATE MOTORS | 25 | 19 | 24 | 32 | 39 | 0 | 41 | 37 | MOTORS AND |
| W 783 | M3-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS | 25 | 16 | 26 | 29 | 39 | 0 | 43 | 32 | GENERATORS |
| W 784 | M3-06 DO YOU REMOVE OR REPLACE MOTOR PARTS | 6 | 5 | 6 | 6 | 19 | 0 | 20 | 16 | |
| W 785 | M3-07 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS | 27 | 17 | 27 | 32 | 40 | 0 | 43 | 37 | |
| W 786 | M3-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS | 4 | 3 | 5 | 3 | 16 | 0 | 18 | 11 | |
| W 787 | M3-09 DO YOU PERFORM ANY TASKS ON FIELD COILS | 3 | 2 | 3 | 4 | 10 | 0 | 10 | 11 | |
| W 788 | M3-10 DO YOU PERFORM ANY TASKS ON ARMATURES | 4 | 2 | 4 | 4 | 13 | 0 | 16 | 5 | |
| W 789 | M3-11 DO YOU PERFORM ANY TASKS ON ROTORS | 3 | 2 | 3 | 4 | 10 | 0 | 12 | 5 | |
| W 790 | M3-12 DO YOU PERFORM ANY TASKS ON BRUSHES | 5 | 3 | 5 | 8 | 17 | 0 | 20 | 11 | |
| W 791 | M3-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS | 3 | 2 | 3 | 6 | 10 | 0 | 12 | 5 | |
| W 792 | M3-14 DO YOU PERFORM ANY TASKS ON COMMUTATORS | 3 | 2 | 4 | 4 | 11 | 0 | 14 | 5 | |
| W 793 | M3-15 DO YOU PERFORM ANY TASKS ON POLE PIECES | 3 | 2 | 3 | 3 | 11 | 0 | 14 | 5 | |
| W 794 | M3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR | 5 | 5 | 3 | 8 | 4 | 0 | 6 | 0 | |
| W 795 | M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR | 7 | 8 | 6 | 9 | 11 | 0 | 14 | 5 | |
| W 796 | M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS | 4 | 5 | 3 | 6 | 7 | 0 | 10 | 0 | |
| W 797 | M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS | 18 | 8 | 17 | 25 | 19 | 0 | 18 | 21 | |
| W 798 | M3-20 DO YOU WORK WITH INDUCTION MOTORS | 15 | 8 | 15 | 20 | 27 | 0 | 29 | 26 | |
| W 799 | M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS | 12 | 5 | 13 | 16 | 17 | 0 | 16 | 21 | |
| W 800 | M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS | 19 | 13 | 20 | 21 | 31 | 0 | 35 | 26 | |
| W 801 | M3-23 DO YOU INSPECT GENERATORS | 11 | 10 | 11 | 14 | 11 | 0 | 12 | 11 | |
| W 802 | M3-24 DO YOU CLEAN OR LUBRICATE GENERATORS | 6 | 3 | 6 | 7 | 7 | 0 | 8 | 5 | |
| W 803 | M3-25 DO YOU OPERATE GENERATORS | 12 | 11 | 9 | 18 | 13 | 0 | 14 | 11 | |
| W 804 | M3-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS | 6 | 8 | 6 | 8 | 6 | 0 | 6 | 5 | |
| W 805 | M3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS | 1 | 2 | 1 | 0 | 3 | 0 | 4 | 0 | |
| W 806 | M3-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS | 7 | 6 | 6 | 9 | 7 | 0 | 6 | 11 | |
| W 807 | M3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS | 1 | 2 | 2 | 0 | 3 | 0 | 4 | 0 | |
| W 808 | M1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB | 79 | 78 | 81 | 75 | 86 | 100 | 90 | 74 | |
| W 809 | M1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS | 13 | 10 | 15 | 11 | 17 | 0 | 16 | 21 | |
| W 810 | M1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS | 15 | 10 | 16 | 14 | 17 | 0 | 16 | 21 | METER MOVEMENTS |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| N 811 | N1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS | 14 | 6 | 16 | 13 | 17 | 0 | 16 | 21 | |
| N 812 | N1-05 DO YOU READ METER SCALES | 80 | 79 | 82 | 77 | 87 | 100 | 92 | 74 | |
| N 813 | N1-06 DO YOU EXTEND THE RANGE OF AMMETERS | 31 | 38 | 32 | 26 | 49 | 0 | 51 | 47 | |
| N 814 | N1-07 DO YOU ZERO OHMMETERS | 80 | 81 | 81 | 75 | 87 | 100 | 92 | 74 | |
| N 815 | N1-08 DO YOU ZERO AMMETERS | 44 | 40 | 43 | 48 | 70 | 50 | 73 | 63 | |
| N 816 | N1-09 DO YOU EXTEND THE RANGE OF VOLTMETERS | 52 | 59 | 51 | 49 | 64 | 50 | 69 | 53 | |
| N 817 | N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT) | 44 | 33 | 41 | 57 | 54 | 0 | 57 | 53 | |
| N 818 | N2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB | 8 | 5 | 6 | 14 | 17 | 0 | 8 | 42 | |
| N 819 | N2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS | 6 | 5 | 4 | 10 | 13 | 0 | 6 | 32 | SATURABLE REACTORS AND MAGNETIC AMPLIFIERS |
| N 820 | N2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS | 4 | 5 | 3 | 5 | 6 | 0 | 4 | 11 | |
| N 821 | N2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS | 4 | 3 | 3 | 6 | 9 | 0 | 4 | 21 | |
| N 822 | N2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS | 4 | 0 | 4 | 6 | 10 | 0 | 6 | 21 | |
| N 823 | N2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS | 4 | 2 | 4 | 7 | 10 | 0 | 6 | 21 | |
| N 824 | N2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS | 1 | 0 | 1 | 1 | 3 | 0 | 2 | 5 | |
| N 825 | N2-08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | |
| N 826 | N2-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF | 2 | 2 | 2 | 2 | 3 | 0 | 2 | 5 | |
| N 827 | N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE | 2 | 2 | 2 | 3 | 3 | 0 | 4 | 0 | |
| N 828 | N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS | 3 | 3 | 3 | 4 | 9 | 0 | 8 | 11 | |
| N 829 | N2-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE REACTORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| N 830 | N2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN SATURABLE REACTORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| N 831 | N2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE REACTORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| N 832 | N2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN SATURABLE REACTORS | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | |
| N 833 | N2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS | 3 | 2 | 2 | 7 | 9 | 0 | 4 | 21 | |
| N 834 | N3-01 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT JOB | 57 | 63 | 56 | 56 | 53 | 50 | 59 | 37 | |
| N 835 | N3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS | 24 | 24 | 23 | 26 | 21 | 0 | 20 | 26 | |
| N 836 | N3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW) | 56 | 56 | 57 | 56 | 54 | 50 | 59 | 42 | WAVESHAPING |
| N 837 | N3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT) | 50 | 46 | 53 | 47 | 49 | 0 | 53 | 42 | CIRCUITS |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 838 | N3-05 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF) | 51 | 49 | 51 | 54 | 49 | 50 | 51 | 42 | |
| N | 839 | N3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS | 32 | 30 | 32 | 36 | 33 | 0 | 33 | 37 | |
| N | 840 | N3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS | 40 | 40 | 40 | 42 | 36 | 0 | 39 | 32 | |
| N | 841 | N3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT | 23 | 29 | 21 | 24 | 20 | 0 | 18 | 26 | |
| N | 842 | N3-09 DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT | 7 | 6 | 8 | 7 | 7 | 0 | 6 | 11 | |
| N | 843 | N3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS | 45 | 57 | 41 | 45 | 41 | 50 | 43 | 37 | |
| N | 844 | N3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS | 35 | 38 | 33 | 39 | 31 | 0 | 35 | 26 | |
| O | 845 | 01-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR PRESENT JOB | 14 | 11 | 14 | 17 | 57 | 0 | 57 | 63 | |
| O | 846 | 01-02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS | 12 | 5 | 11 | 17 | 51 | 0 | 49 | 63 | SINGLE SIDEBAND SYSTEMS |
| O | 847 | 01-03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS | 10 | 3 | 10 | 14 | 47 | 0 | 47 | 53 | |
| O | 848 | 01-04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS | 12 | 5 | 12 | 15 | 53 | 0 | 53 | 58 | |
| O | 849 | 01-05 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE SYSTEMS | 11 | 5 | 11 | 14 | 50 | 0 | 51 | 53 | |
| O | 850 | 01-06 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE COMPONENTS | 10 | 5 | 10 | 14 | 46 | 0 | 45 | 53 | |
| O | 851 | 01-07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE SYSTEMS | 9 | 5 | 9 | 12 | 41 | 0 | 43 | 42 | |
| O | 852 | 01-08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE COMPONENTS | 10 | 5 | 10 | 13 | 46 | 0 | 47 | 47 | |
| O | 853 | 01-09 DO YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS | 10 | 3 | 11 | 12 | 44 | 0 | 47 | 42 | |
| O | 854 | 01-10 DO YOU PERFORM TASKS ON SSB BALANCED MODULATORS | 8 | 3 | 7 | 12 | 34 | 0 | 33 | 42 | |
| O | 855 | 01-11 DO YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS | 7 | 2 | 8 | 9 | 34 | 0 | 39 | 26 | |
| O | 856 | 01-12 DO YOU PERFORM TASKS ON SSB LC FILTERS | 8 | 2 | 8 | 10 | 37 | 0 | 39 | 37 | |
| O | 857 | 01-13 DO YOU PERFORM TASKS ON SSB CRYSTAL FILTERS | 7 | 2 | 8 | 10 | 33 | 0 | 35 | 32 | |
| O | 858 | 01-14 DO YOU PERFORM TASKS ON SSB MECHANICAL FILTERS | 6 | 2 | 6 | 7 | 29 | 0 | 31 | 26 | |
| O | 859 | 01-15 DO YOU PERFORM TASKS ON SSB OSCILLATORS | 9 | 3 | 9 | 11 | 39 | 0 | 41 | 37 | |
| O | 860 | 01-16 DO YOU PERFORM TASKS ON SSB MIXERS | 9 | 2 | 9 | 12 | 39 | 0 | 39 | 42 | |
| O | 861 | 01-17 DO YOU PERFORM TASKS ON SSB DRIVERS | 9 | 3 | 9 | 12 | 39 | 0 | 39 | 42 | |
| O | 862 | 01-18 DO YOU PERFORM TASKS ON SSB POWER AMPLIFIERS | 10 | 3 | 11 | 12 | 44 | 0 | 47 | 42 | |
| O | 863 | 01-19 DO YOU PERFORM TASKS ON SSB RF AMPLIFIERS | 10 | 3 | 11 | 12 | 44 | 0 | 47 | 42 | |
| O | 864 | 01-20 DO YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS | 9 | 3 | 9 | 11 | 40 | 0 | 43 | 37 | |
| O | 865 | 01-21 DO YOU PERFORM TASKS ON SSB IF AMPLIFIERS | 10 | 3 | 11 | 12 | 43 | 0 | 45 | 42 | |
| O | 866 | 01-22 DO YOU PERFORM TASKS ON SSB DEMODULATORS | 8 | 3 | 8 | 11 | 34 | 0 | 35 | 37 | |
| O | 867 | 01-23 DO YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB SYSTEM STAGES | 4 | 5 | 5 | 3 | 20 | 0 | 24 | 11 | |
| O | 868 | 01-24 DO YOU USE OR REFER TO SELECTIVE FADING | 3 | 0 | 3 | 3 | 10 | 0 | 10 | 11 | |
| O | 869 | 01-25 DO YOU USE OR REFER TO PEAK POWER | 11 | 5 | 11 | 15 | 49 | 0 | 49 | 53 | |
| O | 870 | 01-26 DO YOU USE OR REFER TO FREQUENCY STABILITY | 10 | 5 | 9 | 13 | 40 | 0 | 41 | 42 | |
| O | 871 | 01-27 DO YOU USE OR REFER TO RESPONSE CURVES FOR BANDWIDTH FILTERS | 4 | 0 | 4 | 7 | 19 | 0 | 18 | 21 | |
| O | 872 | 01-28 DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB TRANSMITTERS | 4 | 0 | 4 | 6 | 21 | 0 | 20 | 26 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 873 | 01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB TRANSMITTER SCHEMATIC DIAGRAMS | 11 | 3 | 12 | 14 | 50 | 0 | 51 | 53 | |
| 0 874 | 01-30 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB RECEIVER SCHEMATIC DIAGRAMS | 11 | 3 | 12 | 14 | 50 | 0 | 51 | 53 | |
| 0 875 | 02-01 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JOB | 33 | 38 | 32 | 32 | 33 | 0 | 35 | 32 | |
| 0 876 | 02-02 DO YOU INSPECT PULSE MODULATION SYSTEMS | 29 | 30 | 29 | 27 | 30 | 0 | 31 | 32 | PULSE MODULATION |
| 0 877 | 02-03 DO YOU CLEAN PULSE MODULATION SYSTEMS | 19 | 19 | 21 | 14 | 19 | 0 | 27 | 11 | SYSTEMS |
| 0 878 | 02-04 DO YOU ALIGN PULSE MODULATION SYSTEMS | 27 | 32 | 26 | 25 | 29 | 0 | 29 | 32 | |
| 0 879 | 02-05 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS | 27 | 25 | 28 | 25 | 26 | 0 | 27 | 26 | |
| 0 880 | 02-06 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM COMPONENTS | 19 | 14 | 19 | 21 | 24 | 0 | 27 | 32 | |
| 0 881 | 02-07 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS | 24 | 25 | 26 | 20 | 20 | 0 | 24 | 11 | |
| 0 882 | 02-08 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM COMPONENTS | 16 | 14 | 16 | 15 | 20 | 0 | 20 | 21 | |
| 0 883 | 02-09 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM) SYSTEMS | 20 | 17 | 20 | 20 | 17 | 0 | 16 | 21 | |
| 0 884 | 02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM) SYSTEMS | 16 | 14 | 17 | 16 | 16 | 0 | 14 | 21 | |
| 0 885 | 02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM) SYSTEMS | 14 | 14 | 14 | 14 | 17 | 0 | 16 | 21 | |
| 0 886 | 02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS | 10 | 10 | 11 | 9 | 20 | 0 | 18 | 26 | |
| 0 887 | 02-13 DO YOU WORK ON LINE PULSING MODULATION SYSTEMS | 7 | 6 | 7 | 6 | 9 | 0 | 10 | 5 | |
| 0 888 | 02-14 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF MODULATION SYSTEM | 13 | 22 | 13 | 10 | 11 | 0 | 14 | 5 | |
| 0 889 | 02-15 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES | 24 | 25 | 24 | 22 | 24 | 0 | 24 | 26 | |
| 0 890 | 02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODES | 8 | 8 | 9 | 6 | 13 | 0 | 12 | 16 | |
| 0 891 | 02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS | 21 | 24 | 21 | 21 | 26 | 0 | 24 | 32 | |
| 0 892 | 02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMERS | 19 | 19 | 19 | 18 | 24 | 0 | 22 | 32 | |
| 0 893 | 02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATRONS | 4 | 5 | 3 | 5 | 4 | 0 | 2 | 11 | |
| 0 894 | 02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS | 14 | 8 | 15 | 15 | 19 | 0 | 16 | 26 | |
| 0 895 | 02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBES | 19 | 19 | 19 | 18 | 21 | 0 | 20 | 26 | |
| 0 896 | 02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIERS | 23 | 27 | 22 | 25 | 24 | 0 | 24 | 26 | |
| 0 897 | 02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS | 16 | 22 | 19 | 15 | 23 | 0 | 24 | 21 | |
| 0 898 | 02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIERS | 21 | 19 | 21 | 21 | 24 | 0 | 24 | 26 | |
| 0 899 | 02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTORS | 23 | 21 | 22 | 25 | 23 | 0 | 22 | 26 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 900 | 02-26 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS | 22 | 22 | 22 | 24 | 21 | 0 | 20 | 26 | |
| 0 901 | 02-27 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS | 16 | 14 | 17 | 15 | 19 | 0 | 16 | 26 | |
| 0 902 | 02-28 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES | 9 | 11 | 9 | 7 | 7 | 0 | 6 | 11 | |
| 0 903 | 02-29 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF) | 28 | 29 | 28 | 30 | 27 | 0 | 29 | 26 | |
| 0 904 | 02-30 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT) | 26 | 27 | 26 | 26 | 26 | 0 | 27 | 26 | |
| 0 905 | 02-31 DO YOU USE OR REFER TO PULSE WIDTH (PW) | 31 | 35 | 30 | 31 | 30 | 0 | 33 | 26 | |
| 0 906 | 02-32 DO YOU USE OR REFER TO PULSE SHAPE | 31 | 35 | 30 | 30 | 31 | 0 | 35 | 26 | |
| 0 907 | 02-33 DO YOU USE OR REFER TO PEAK POWER | 27 | 33 | 26 | 25 | 27 | 0 | 29 | 26 | |
| 0 908 | 02-34 DO YOU USE OR REFER TO AVERAGE POWER | 21 | 25 | 19 | 24 | 23 | 0 | 22 | 26 | |
| 0 909 | 02-35 DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF) | 16 | 22 | 16 | 12 | 14 | 0 | 18 | 5 | |
| 0 910 | 02-36 DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF) | 27 | 25 | 26 | 31 | 27 | 0 | 29 | 26 | |
| 0 911 | 02-37 DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS | 8 | 11 | 9 | 4 | 16 | 0 | 16 | 16 | |
| 0 912 | 02-38 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS | 24 | 27 | 22 | 26 | 29 | 0 | 31 | 26 | |
| 0 913 | 02-39 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS | 25 | 29 | 23 | 28 | 30 | 0 | 31 | 32 | |
| 0 914 | 03-01 DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB | 46 | 48 | 45 | 49 | 40 | 100 | 39 | 37 | |
| 0 915 | 03-02 DO YOU INSPECT ANTENNAS | 43 | 43 | 40 | 50 | 33 | 100 | 29 | 37 | |
| 0 916 | 03-03 DO YOU CLEAN ANTENNAS | 38 | 35 | 37 | 40 | 29 | 100 | 27 | 26 | |
| 0 917 | 03-04 DO YOU PHYSICALLY ALIGN ANTENNAS | 21 | 21 | 22 | 19 | 27 | 100 | 24 | 26 | ANTENNAS |
| 0 918 | 03-05 DO YOU ELECTRICALLY ALIGN ANTENNAS | 31 | 25 | 30 | 36 | 30 | 100 | 27 | 32 | |
| 0 919 | 03-06 DO YOU TROUBLESHOOT TO ANTENNAS | 33 | 30 | 32 | 38 | 24 | 100 | 22 | 21 | |
| 0 920 | 03-07 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS | 31 | 27 | 30 | 33 | 30 | 100 | 29 | 26 | |
| 0 921 | 03-08 DO YOU REMOVE OR INSTALL ANTENNAS | 25 | 19 | 26 | 28 | 11 | 0 | 12 | 11 | |
| 0 922 | 03-09 DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS | 30 | 27 | 29 | 33 | 29 | 100 | 29 | 21 | |
| 0 923 | 03-10 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES | 2 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | |
| 0 924 | 03-11 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES | 2 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | |
| 0 925 | 03-12 DO YOU DETERMINE THE DIRECTION OF THE MAGNETIC LINES IN RELATION TO THE ELECTRIC LINES OF FORCE FOR ANTENNAS | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | |
| 0 926 | 03-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE OF CORRECT LENGTH (HALF-WAVE) ACT AS | 2 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | |
| 0 927 | 03-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE LONGER THAN A HALF-WAVE ACT AS INDUCTIVE LOADS | 2 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | |
| 0 928 | 03-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE SHORTER THAN A HALF-WAVE ACT AS CAPACITIVE LOADS | 2 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 929 | 03-16 DO YOU WORK WITH HERTZ ANTENNAS | 6 | 8 | 7 | 5 | 6 | 0 | 8 | 0 | |
| 0 930 | 03-17 DO YOU WORK WITH MARCONI ANTENNAS | 2 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | |
| 0 931 | 03-18 DO YOU WORK WITH BROADSIDE ARRAYS | 3 | 3 | 4 | 2 | 4 | 50 | 4 | 0 | |
| 0 932 | 03-19 DO YOU WORK WITH END-FIRE ARRAYS | 3 | 3 | 3 | 3 | 1 | 0 | 0 | 5 | |
| 0 933 | 03-20 DO YOU WORK WITH CARDIOID ARRAYS | 7 | 3 | 6 | 11 | 10 | 0 | 10 | 11 | |
| 0 934 | 03-21 DO YOU WORK WITH COLLINEAR ARRAYS | 5 | 6 | 5 | 6 | 3 | 0 | 2 | 5 | |
| 0 935 | 03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS | 2 | 0 | 3 | 2 | 1 | 0 | 0 | 5 | |
| 0 936 | 03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS | 2 | 2 | 2 | 2 | 1 | 0 | 0 | 5 | |
| 0 937 | 03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS | 4 | 2 | 5 | 2 | 6 | 0 | 6 | 5 | |
| 0 938 | 03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 5 | |
| 0 939 | 03-26 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION | 2 | 0 | 2 | 1 | 1 | 0 | 0 | 5 | |
| 0 940 | 03-27 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | |
| 0 941 | 03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED | 14 | 10 | 15 | 13 | 9 | 0 | 10 | 5 | |
| 0 942 | 03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED | 14 | 6 | 14 | 19 | 4 | 0 | 4 | 5 | |
| 0 943 | 03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON | 6 | 0 | 8 | 5 | 3 | 0 | 4 | 0 | |
| 0 944 | 03-31 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | |
| 0 945 | 03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS | 5 | 3 | 6 | 4 | 7 | 0 | 10 | 0 | |
| 0 946 | 03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS | 4 | 0 | 6 | 4 | 9 | 0 | 10 | 5 | |
| 0 947 | 03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS | 6 | 3 | 6 | 6 | 10 | 50 | 10 | 5 | |
| 0 948 | 03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS | 22 | 27 | 21 | 19 | 11 | 0 | 12 | 11 | |
| 0 949 | 03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS | 18 | 11 | 17 | 22 | 17 | 50 | 16 | 16 | |
| 0 950 | 03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS | 12 | 8 | 13 | 9 | 13 | 50 | 16 | 0 | |
| 0 951 | 03-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY | 17 | 24 | 17 | 14 | 17 | 0 | 14 | 21 | |
| 0 952 | 03-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS | 8 | 5 | 8 | 10 | 14 | 0 | 14 | 16 | |
| P 953 | P1-01 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS | 13 | 22 | 11 | 11 | 3 | 0 | 2 | 5 | |
| P 954 | P1-02 DO YOU REFER TO OR USE COPPER LOSS OR I2R LOSS IN TRANSMISSION LINES | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | TRANSMISSION LINES |
| P 955 | P1-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES | 3 | 5 | 3 | 3 | 0 | 0 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| Dy-TSk | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 |
|---|---|---|---|---|---|---|---|---|
| P 956 PI-04 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES | 5 | 6 | 4 | 7 | 1 | 0 | 0 | 5 |
| P 957 PI-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES | 2 | 2 | 1 | 3 | 0 | 0 | 0 | 0 |
| P 958 PI-06 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES | 5 | 8 | 4 | 6 | 0 | 0 | 0 | 0 |
| P 959 PI-07 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES | 3 | 3 | 2 | 3 | 0 | 0 | 0 | 0 |
| P 960 PI-08 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES | 3 | 6 | 2 | 2 | 0 | 0 | 0 | 0 |
| P 961 PI-09 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES | 1 | 2 | 1 | 2 | 0 | 0 | 0 | 0 |
| P 962 PI-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES | 12 | 16 | 10 | 12 | 4 | 0 | 2 | 11 |
| P 963 PI-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES | 10 | 14 | 9 | 8 | 3 | 0 | 2 | 5 |
| P 964 PI-12 DO YOU TROUBLESHOOT TRANSMISSION LINES | 9 | 16 | 8 | 7 | 1 | 0 | 2 | 0 |
| P 965 PI-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION | 2 | 3 | 2 | 0 | 1 | 0 | 2 | 0 |
| P 966 PI-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS | 2 | 2 | 2 | 1 | 0 | 0 | 0 | 0 |
| P 967 PI-15 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS | 6 | 11 | 4 | 7 | 3 | 0 | 2 | 5 |
| P 968 PI-16 DO YOU MEASURE STANDING WAVE RATIOS (SR) OF TRANSMISSION LINES | 3 | 2 | 3 | 6 | 4 | 0 | 4 | 5 |
| P 969 PI-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES | 2 | 2 | 2 | 3 | 4 | 0 | 4 | 5 |
| P 970 PI-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 |
| P 971 PI-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS | 4 | 5 | 4 | 5 | 3 | 0 | 2 | 5 |
| P 972 PI-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING | 2 | 0 | 2 | 2 | 1 | 0 | 2 | 0 |
| P 973 PI-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| P 974 PI-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES | 2 | 3 | 2 | 2 | 3 | 0 | 2 | 5 |
| P 975 PI-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| P 976 PI-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 |
| P 977 PI-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 |
| P 978 PI-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| P 979 PI-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| P 980 PI-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| P 981 | P1-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES | 2 | 5 | 2 | 1 | 0 | 0 | 0 | 0 | |
| P 982 | P1-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES | 4 | 8 | 3 | 4 | 3 | 0 | 2 | 5 | |
| P 983 | P1-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING | 2 | 3 | 2 | 3 | 1 | 0 | 2 | 0 | |
| P 984 | P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB | 43 | 44 | 40 | 48 | 30 | 50 | 31 | 26 | |
| P 985 | P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS | 40 | 43 | 36 | 47 | 23 | 100 | 20 | 21 | WAVEGUIDES AND CAVITY RESONATORS |
| P 986 | P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS | 25 | 21 | 26 | 26 | 20 | 50 | 20 | 16 | |
| P 987 | P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS | 6 | 5 | 6 | 6 | 4 | 0 | 4 | 5 | |
| P 988 | P2-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS | 6 | 3 | 6 | 6 | 4 | 0 | 4 | 5 | |
| P 989 | P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS | 29 | 29 | 27 | 32 | 19 | 50 | 20 | 11 | |
| P 990 | P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS | 12 | 8 | 12 | 14 | 11 | 0 | 14 | 5 | |
| P 991 | P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS | 25 | 17 | 25 | 28 | 17 | 0 | 18 | 16 | |
| P 992 | P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES | 35 | 38 | 32 | 42 | 20 | 100 | 18 | 16 | |
| P 993 | P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS | 32 | 33 | 30 | 37 | 20 | 100 | 20 | 11 | |
| P 994 | P2-11 DO YOU REMOVE OR INSTALL DUMMY LOADS | 24 | 24 | 23 | 27 | 10 | 0 | 12 | 5 | |
| P 995 | P2-12 DO YOU REMOVE OR INSTALL E BENDS | 6 | 0 | 8 | 6 | 3 | 0 | 4 | 0 | |
| P 996 | P2-13 DO YOU REMOVE OR INSTALL H BENDS | 7 | 2 | 9 | 8 | 4 | 0 | 6 | 0 | |
| P 997 | P2-14 DO YOU REMOVE OR INSTALL OTHER BENDS | 12 | 6 | 14 | 9 | 11 | 0 | 14 | 5 | |
| P 998 | P2-15 DO YOU REMOVE OR INSTALL CHOKE JOINTS | 6 | 2 | 7 | 7 | 7 | 0 | 8 | 5 | |
| P 999 | P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS | 6 | 10 | 6 | 3 | 7 | 50 | 8 | 0 | |
| P1000 | P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS | 16 | 11 | 18 | 21 | 11 | 0 | 10 | 16 | |
| P1001 | P2-18 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS | 12 | 10 | 13 | 12 | 9 | 50 | 10 | 0 | |
| P1002 | P2-19 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES | 3 | 0 | 3 | 4 | 1 | 0 | 0 | 5 | |
| P1003 | P2-20 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES | 3 | 0 | 3 | 4 | 1 | 0 | 0 | 5 | |
| P1004 | P2-21 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES | 4 | 2 | 5 | 4 | 0 | 0 | 0 | 0 | |
| P1005 | P2-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES | 3 | 3 | 4 | 3 | 0 | 0 | 0 | 0 | |
| P1006 | P2-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES | 1 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | |
| P1007 | P2-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1008 | P2-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| P1009 | P2-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS | 2 | 2 | 2 | 2 | 1 | 0 | 2 | 0 | |
| P1010 | P2-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OF .7 WAVELENGTHS | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| P1011 | P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | |
| P1012 | P2-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF | 2 | 2 | 3 | 2 | 1 | 0 | 0 | 5 | |
| P1013 | P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| P1014 | P2-31 DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE DIRECTION OF PROPAGATION, DIRECTION OF "E" FIELD, OR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| P1015 | P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | |
| P1016 | P2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| P1017 | P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR "H" LINES IN WAVEGUIDES | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | |
| P1018 | P2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 7 | 5 | 6 | 11 | 9 | 50 | 8 | 5 | |
| P1019 | P2-36 ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 6 | 5 | 7 | 7 | 6 | 50 | 4 | 5 | |
| P1020 | P2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 5 | 3 | 4 | 7 | 4 | 0 | 4 | 5 | |
| P1021 | P2-38 ARE APERTURES (WINDOWS OR IRISES) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 11 | 5 | 11 | 14 | 10 | 50 | 8 | 11 | |
| P1022 | P2-39 ARE DON'T REMEMBER THE KIND OF ENERGY COUPLING USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 16 | 24 | 14 | 16 | 10 | 50 | 8 | 11 | |
| P1023 | P2-40 DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | |
| P1024 | P2-41 DO YOU DETERMINE THE POSITIONING OF LOOPS IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| P1025 | P2-42 DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| P1026 | P2-43 ARE CHOKE JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 5 | 3 | 5 | 7 | 6 | 0 | 6 | 5 | |
| P1027 | P2-44 ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 13 | 5 | 13 | 17 | 10 | 50 | 10 | 5 | |
| P1028 | P2-45 ARE DON'T REMEMBER THE KIND OF JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 17 | 19 | 17 | 16 | 10 | 50 | 8 | 11 | |
| P1029 | P2-46 DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING | 6 | 5 | 5 | 7 | 6 | 0 | 6 | 5 | |
| P1030 | P2-47 DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING | 5 | 6 | 4 | 8 | 4 | 0 | 6 | 0 | |
| P1031 | P2-48 DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING | 6 | 6 | 8 | 4 | 1 | 0 | 2 | 0 | |
| P1032 | P2-49 DO YOU TUNE CAVITY RESONATORS USING DON'T REMEMBER THE METHOD OF TUNING | 13 | 11 | 13 | 14 | 7 | 0 | 8 | 5 | |
| P1033 | P2-50 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS | 17 | 11 | 16 | 23 | 9 | 0 | 4 | 21 | |
| P1034 | P3-01 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR | 48 | 59 | 45 | 47 | 24 | 100 | 24 | 16 | |
| P1035 | P3-02 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE | 8 | 8 | 8 | 9 | 1 | 0 | 2 | 0 | MICROWAVE AMPLIFIERS AND OSCILLATORS |
| P1036 | P3-03 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME | 6 | 6 | 6 | 8 | 1 | 0 | 2 | 0 | |
| P1037 | P3-04 DO YOU USE OR REFER TO LEAD INDUCTANCE | 5 | 5 | 5 | 4 | 0 | 0 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 |
|---|---|---|---|---|---|---|---|---|---|
| P1038 | P3-05 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL CIRCUITRY | 15 | 14 | 15 | 16 | 4 | 0 | 4 | 5 |
| P1039 | P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION | 6 | 3 | 7 | 6 | 1 | 0 | 2 | 0 |
| P1040 | P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING | 7 | 8 | 8 | 7 | 3 | 0 | 4 | 0 |
| P1041 | P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS | 3 | 5 | 4 | 2 | 0 | 0 | 0 | 0 |
| P1042 | P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS | 2 | 5 | 1 | 1 | 0 | 0 | 0 | 0 |
| P1043 | P3-10 DO YOU WORK WITH REFLEX KLYSTRONS | 17 | 19 | 15 | 19 | 7 | 0 | 6 | 11 |
| P1044 | P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT) | 31 | 32 | 32 | 27 | 19 | 50 | 18 | 16 |
| P1045 | P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC AMPLIFIERS | 1 | 2 | 1 | 3 | 0 | 0 | 0 | 0 |
| P1046 | P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS | 2 | 3 | 1 | 2 | 1 | 0 | 2 | 0 |
| P1047 | P3-14 DO YOU WORK WITH MAGNETRONS | 25 | 32 | 23 | 27 | 16 | 50 | 16 | 11 |
| P1048 | P3-15 DO YOU INSPECT KLYSTRONS OR TWT | 36 | 43 | 34 | 37 | 14 | 0 | 16 | 11 |
| P1049 | P3-16 DO YOU CLEAN KLYSTRONS OR TWT | 19 | 19 | 20 | 17 | 7 | 0 | 8 | 5 |
| P1050 | P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY | 28 | 32 | 27 | 27 | 6 | 0 | 6 | 5 |
| P1051 | P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY | 20 | 24 | 21 | 17 | 4 | 0 | 4 | 5 |
| P1052 | P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR TWT | 38 | 46 | 36 | 39 | 16 | 50 | 14 | 16 |
| P1053 | P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT | 31 | 40 | 29 | 29 | 19 | 50 | 18 | 16 |
| P1054 | P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT | 40 | 48 | 38 | 42 | 19 | 50 | 18 | 16 |
| P1055 | P3-22 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS | 7 | 11 | 7 | 5 | 6 | 0 | 6 | 5 |
| P1056 | P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS | 3 | 5 | 2 | 4 | 0 | 0 | 0 | 0 |
| P1057 | P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS | 2 | 5 | 1 | 1 | 0 | 0 | 0 | 0 |
| P1058 | P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS | 3 | 11 | 2 | 1 | 0 | 0 | 0 | 0 |
| P1059 | P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS | 3 | 11 | 2 | 1 | 0 | 0 | 0 | 0 |
| P1060 | P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS | 4 | 11 | 3 | 4 | 1 | 0 | 2 | 0 |
| P1061 | P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS | 3 | 11 | 2 | 1 | 0 | 0 | 0 | 0 |
| P1062 | P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER | 4 | 11 | 2 | 5 | 0 | 0 | 0 | 0 |
| P1063 | P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS | 1 | 5 | 1 | 0 | 0 | 0 | 0 | 0 |
| P1064 | P3-31 DO YOU INSPECT MAGNETRONS | 22 | 25 | 21 | 25 | 11 | 50 | 12 | 5 |
| P1065 | P3-32 DO YOU CLEAN MAGNETRONS | 15 | 14 | 15 | 14 | 7 | 0 | 10 | 0 |
| P1066 | P3-33 DO YOU ADJUST MAGNETRONS | 18 | 24 | 16 | 18 | 6 | 0 | 4 | 11 |
| P1067 | P3-34 DO YOU TUNE MAGNETRONS | 18 | 21 | 17 | 20 | 7 | 0 | 6 | 11 |
| P1068 | P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS | 23 | 27 | 21 | 24 | 14 | 50 | 14 | 11 |
| P1069 | P3-36 DO YOU TROUBLESHOOT MAGNETRONS | 19 | 16 | 18 | 22 | 10 | 0 | 12 | 5 |
| P1070 | P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON | 23 | 27 | 20 | 25 | 14 | 50 | 14 | 11 |
| P1071 | P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS | 5 | 6 | 5 | 3 | 3 | 0 | 4 | 0 |
| P1072 | P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 |
| P1073 | P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| P1074 | P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRIDS | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 |
|---|---|---|---|---|---|---|---|---|---|
| P1075 | P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS | 1 | 2 | 1 | 1 | 1 | 0 | 2 | 0 |
| P1076 | P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS DRIFT SPACES | 1 | 2 | 1 | 0 | 1 | 0 | 2 | 0 |
| P1077 | P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER GRIDS | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1078 | P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER CAVITIES | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 |
| P1079 | P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS | 2 | 5 | 1 | 1 | 1 | 0 | 2 | 0 |
| P1080 | P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES | 2 | 6 | 1 | 1 | 0 | 0 | 0 | 0 |
| P1081 | P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REPELLER (REFLECTOR) PLATES | 5 | 5 | 4 | 8 | 0 | 0 | 0 | 0 |
| P1082 | P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS | 6 | 10 | 4 | 6 | 3 | 0 | 4 | 0 |
| P1083 | P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS | 3 | 5 | 2 | 5 | 0 | 0 | 0 | 0 |
| P1084 | P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES | 6 | 3 | 5 | 8 | 0 | 0 | 0 | 0 |
| P1085 | P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS | 2 | 5 | 1 | 4 | 0 | 0 | 0 | 0 |
| P1086 | P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS | 6 | 6 | 5 | 8 | 0 | 0 | 0 | 0 |
| P1087 | P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES | 5 | 6 | 4 | 7 | 0 | 0 | 0 | 0 |
| P1088 | P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS | 6 | 6 | 4 | 8 | 1 | 0 | 2 | 0 |
| P1089 | P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS | 18 | 24 | 19 | 14 | 4 | 0 | 6 | 0 |
| P1090 | P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES | 20 | 27 | 21 | 14 | 6 | 0 | 8 | 0 |
| P1091 | P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS | 17 | 21 | 17 | 15 | 6 | 0 | 8 | 0 |
| P1092 | P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES | 18 | 22 | 18 | 14 | 4 | 0 | 6 | 0 |
| P1093 | P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELIXES | 16 | 21 | 16 | 14 | 4 | 0 | 6 | 0 |
| P1094 | P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS | 19 | 25 | 19 | 13 | 4 | 0 | 6 | 0 |
| P1095 | P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS | 10 | 17 | 10 | 8 | 3 | 0 | 4 | 0 |
| P1096 | P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENUATORS | 16 | 29 | 15 | 11 | 4 | 0 | 6 | 0 |
| P1097 | P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| P1098 | P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| P1099 | P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLER CAVITIES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| P1100 | P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| P1101 | P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | |
| P1102 | P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| P1103 | P3-70 DO YOU PERFORM TASKS ON ANODES | 4 | 6 | 3 | 4 | 3 | 0 | 4 | 0 | |
| P1104 | P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS | 2 | 5 | 2 | 2 | 1 | 0 | 2 | 0 | |
| P1105 | P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS | 3 | 6 | 3 | 3 | 3 | 0 | 4 | 0 | |
| P1106 | P3-73 DO YOU PERFORM TASKS ON HEATER LEADS | 4 | 8 | 3 | 3 | 3 | 0 | 4 | 0 | |
| P1107 | P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES | 6 | 8 | 4 | 8 | 1 | 0 | 2 | 0 | |
| P1108 | P3-75 DO YOU PERFORM TASKS ON CATHODES | 5 | 6 | 4 | 6 | 4 | 0 | 6 | 0 | |
| P1109 | P3-76 DO YOU PERFORM TASKS ON MAGNETS | 4 | 5 | 3 | 5 | 1 | 0 | 2 | 0 | |
| Q1110 | Q1-01 DO YOU USE OR REFER TO STORAGE REGISTERS | 23 | 17 | 21 | 31 | 16 | 0 | 10 | 32 | |
| Q1111 | Q1-02 DO YOU USE OR REFER TO SHIFT REGISTERS | 26 | 19 | 23 | 37 | 20 | 0 | 12 | 42 | |
| Q1112 | Q1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS | 25 | 21 | 23 | 30 | 21 | 0 | 16 | 37 | REGISTERS |
| Q1113 | Q1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS | 22 | 17 | 21 | 25 | 20 | 0 | 16 | 32 | |
| Q1114 | Q1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS | 22 | 19 | 20 | 29 | 19 | 0 | 12 | 37 | |
| Q1115 | Q1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS | 18 | 13 | 16 | 25 | 17 | 0 | 12 | 32 | |
| Q1116 | Q1-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES | 13 | 19 | 12 | 17 | 19 | 0 | 12 | 21 | |
| Q1117 | Q2-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB | 31 | 29 | 28 | 37 | 33 | 100 | 29 | 37 | |
| Q1118 | Q2-02 DO YOU USE OR REFER TO DELAY LINES | 22 | 25 | 20 | 23 | 27 | 50 | 27 | 26 | |
| Q1119 | Q2-03 DO YOU USE OR REFER TO MAGNETIC CORES | 16 | 16 | 15 | 19 | 13 | 50 | 12 | 11 | |
| Q1120 | Q2-04 DO YOU USE OR REFER TO MAGNETIC DRUMS | 5 | 8 | 5 | 4 | 3 | 0 | 2 | 5 | STORAGE DEVICES |
| Q1121 | Q2-05 DO YOU USE OR REFER TO MAGNETIC TAPES | 17 | 16 | 13 | 26 | 13 | 0 | 10 | 21 | |
| Q1122 | Q2-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED OR MEMORY SYSTEMS | 13 | 11 | 11 | 18 | 4 | 0 | 4 | 5 | |
| Q1123 | Q2-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS | 13 | 13 | 11 | 18 | 7 | 0 | 4 | 16 | |
| Q1124 | Q2-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS | 7 | 6 | 6 | 9 | 3 | 0 | 2 | 5 | |
| Q1125 | Q2-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES | 13 | 14 | 11 | 16 | 19 | 50 | 20 | 11 | |
| Q1126 | Q3-01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D) | 30 | 35 | 25 | 38 | 19 | 100 | 14 | 21 | |
| Q1127 | Q3-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT | 2 | 3 | 2 | 2 | 1 | 0 | 2 | 0 | DIGITAL TO ANALOG CONVERTERS |
| Q1128 | Q3-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) | 2 | 3 | 2 | 2 | 1 | 0 | 2 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| DY-TSK | | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Q1129 | Q3-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS | 3 | 5 | 2 | 2 | 1 | 0 | 2 | 0 | |
| Q1130 | Q3-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS | 5 | 5 | 6 | 3 | 6 | 0 | 6 | 5 | |
| Q1131 | Q3-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS | 5 | 3 | 5 | 6 | 6 | 0 | 6 | 5 | |
| Q1132 | Q3-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS | 5 | 6 | 4 | 5 | 1 | 0 | 2 | 0 | |
| Q1133 | Q3-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS | 4 | 3 | 5 | 3 | 3 | 0 | 4 | 0 | |
| Q1134 | Q3-09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER | 7 | 6 | 7 | 8 | 6 | 0 | 6 | 5 | |
| Q1135 | Q3-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS | 6 | 6 | 7 | 3 | 7 | 0 | 8 | 5 | |
| Q1136 | Q3-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS | 6 | 3 | 8 | 6 | 7 | 0 | 9 | 5 | |
| Q1137 | Q3-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS | 6 | 6 | 6 | 5 | 3 | 0 | 4 | 0 | |
| Q1138 | Q3-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS | 7 | 6 | 8 | 5 | 6 | 0 | 8 | 0 | |
| Q1139 | Q3-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS | 5 | 6 | 4 | 6 | 3 | 0 | 4 | 0 | |
| R1140 | R1-01 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB | 6 | 8 | 6 | 7 | 16 | 0 | 12 | 26 | PHANTASTRONS |
| R1141 | R2-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS | 26 | 29 | 24 | 28 | 37 | 50 | 39 | 32 | |
| R1142 | R2-02 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS | 18 | 16 | 17 | 21 | 24 | 0 | 22 | 32 | SCHMITT TRIGGERS |
| R1143 | R2-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS | 16 | 17 | 14 | 18 | 19 | 0 | 18 | 21 | |
| R1144 | R3-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES | 44 | 27 | 44 | 54 | 46 | 0 | 45 | 53 | CABLE FABRICATION |
| R1145 | R3-02 DO YOU FABRICATE COAXIAL CABLES | 54 | 46 | 54 | 59 | 50 | 0 | 51 | 53 | |
| S1146 | S1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS | 47 | 52 | 45 | 49 | 27 | 0 | 31 | 21 | |
| S1147 | S1-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE LIGHT DECODER SYSTEMS | 27 | 19 | 26 | 37 | 11 | 0 | 14 | 5 | INPUT/OUTPUT DEVICES |
| S1148 | S1-03 DO YOU ANALYZE NIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA | 5 | 3 | 5 | 4 | 1 | 0 | 2 | 0 | |
| S1149 | S2-01 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB | 5 | 6 | 4 | 5 | 0 | 0 | 0 | 0 | PHOTO SENSITIVE DEVICES |
| S1150 | S3-01 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS | 13 | 14 | 12 | 15 | 21 | 0 | 20 | 26 | |
| S1151 | S3-02 DO YOU MEASURE EXCITATION FREQUENCIES | 3 | 3 | 2 | 5 | 6 | 0 | 4 | 11 | |
| S1152 | S3-03 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS | 2 | 2 | 2 | 2 | 3 | 0 | 4 | 0 | SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS) |
| S1153 | S3-04 DO YOU USE OR REFER TO EXCITATION FREQUENCIES | 3 | 2 | 3 | 4 | 6 | 0 | 4 | 11 | |
| S1154 | S3-05 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS | 2 | 2 | 3 | 1 | 3 | 0 | 4 | 0 | |
| S1155 | S3-06 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION | 7 | 10 | 6 | 9 | 16 | 0 | 14 | 21 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| S1156 | S3-07 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION | 8 | 10 | 7 | 9 | 11 | 0 | 10 | 16 | |
| S1157 | S3-08 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION | 8 | 6 | 8 | 10 | 19 | 0 | 16 | 26 | |
| S1158 | S3-09 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION | 9 | 11 | 8 | 9 | 13 | 0 | 12 | 16 | |
| T1159 | T1-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS | 18 | 21 | 18 | 17 | 0 | 0 | 0 | 0 | |
| T1160 | T1-02 DO YOU INSPECT INFRARED SYSTEMS | 14 | 19 | 14 | 12 | 0 | 0 | 0 | 0 | |
| T1161 | T1-03 DO YOU CLEAN INFRARED SYSTEMS | 13 | 19 | 13 | 10 | 0 | 0 | 0 | 0 | INFRARED |
| T1162 | T1-04 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS | 14 | 19 | 14 | 12 | 0 | 0 | 0 | 0 | |
| T1163 | T1-05 DO YOU OPERATE INFRARED SYSTEMS | 14 | 14 | 14 | 13 | 0 | 0 | 0 | 0 | |
| T1164 | T1-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS | 13 | 13 | 13 | 12 | 0 | 0 | 0 | 0 | |
| T1165 | T1-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS | 15 | 16 | 15 | 13 | 0 | 0 | 0 | 0 | |
| T1166 | T1-08 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS | 11 | 11 | 11 | 9 | 0 | 0 | 0 | 0 | |
| T1167 | T1-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS | 14 | 19 | 13 | 11 | 0 | 0 | 0 | 0 | |
| T1168 | T1-10 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS | 11 | 14 | 11 | 8 | 0 | 0 | 0 | 0 | |
| T1169 | T1-11 DO YOU USE OR REFER TO FAR REGION | 6 | 6 | 6 | 5 | 0 | 0 | 0 | 0 | |
| T1170 | T1-12 DO YOU USE OR REFER TO INTERMEDIATE REGION | 6 | 6 | 6 | 5 | 0 | 0 | 0 | 0 | |
| T1171 | T1-13 DO YOU USE OR REFER TO NEAR REGION | 6 | 8 | 6 | 5 | 0 | 0 | 0 | 0 | |
| T1172 | T1-14 DO YOU USE OR REFER TO MICRON | 8 | 14 | 8 | 7 | 0 | 0 | 0 | 0 | |
| T1173 | T1-15 DO YOU USE OR REFER TO GRAY BODIES | 7 | 11 | 7 | 6 | 0 | 0 | 0 | 0 | |
| T1174 | T1-16 DO YOU USE OR REFER TO BLACK BODIES | 14 | 14 | 15 | 14 | 0 | 0 | 0 | 0 | |
| T1175 | T1-17 DO YOU USE OR REFER TO ABSORPTION | 9 | 13 | 9 | 7 | 0 | 0 | 0 | 0 | |
| T1176 | T1-18 DO YOU USE OR REFER TO SCATTERING | 6 | 10 | 6 | 7 | 0 | 0 | 0 | 0 | |
| T1177 | T1-19 DO YOU USE OR REFER TO ABSOLUTE ZERO | 11 | 13 | 12 | 9 | 0 | 0 | 0 | 0 | |
| T1178 | T1-20 DO YOU PERFORM TASKS ON BLITZ | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | |
| T1179 | T1-21 DO YOU PERFORM TASKS ON TARGET BUTTONS | 2 | 3 | 1 | 5 | 0 | 0 | 0 | 0 | |
| T1180 | T1-22 DO YOU PERFORM TASKS ON ERECTOR LENSES | 3 | 6 | 3 | 2 | 0 | 0 | 0 | 0 | |
| T1181 | T1-23 DO YOU PERFORM TASKS ON OCULAR LENSES | 5 | 10 | 4 | 3 | 0 | 0 | 0 | 0 | |
| T1182 | T1-24 DO YOU PERFORM TASKS ON CORRECTION LENSES | 4 | 6 | 4 | 4 | 0 | 0 | 0 | 0 | |
| T1183 | T1-25 DO YOU PERFORM TASKS ON FILTERS | 8 | 16 | 6 | 8 | 0 | 0 | 0 | 0 | |
| T1184 | T1-26 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS | 3 | 5 | 3 | 3 | 0 | 0 | 0 | 0 | |
| T1185 | T1-27 DO YOU PERFORM TASKS ON PLANE MIRRORS | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | |
| T1186 | T2-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| T1187 | T2-02 DO YOU INSPECT LASER SYSTEMS | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| T1188 | T2-03 DO YOU CLEAN LASER SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | LASERS |
| T1189 | T2-04 DO YOU OPERATE LASER SYSTEMS | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| T1190 | T2-05 DO YOU OPERATE LASER SYSTEMS | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| T1191 | T2-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| T1192 | T2-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1193 | T2-08 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1194 | T2-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1195 | T2-10 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1196 | T2-11 DO YOU USE OR REFER TO ANGSTROMS (A) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1197 | T2-12 DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1198 | T2-13 DO YOU USE OR REFER TO GROUND STATE | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | |
| T1199 | T2-14 DO YOU USE OR REFER TO EXCITED STATE | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | |
| T1200 | T2-15 DO YOU USE OR REFER TO PACKET OF RADIATION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1201 | T2-16 DO YOU USE OR REFER TO PHOTONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1202 | T2-17 DO YOU USE OR REFER TO SPONTANEOUS EMISSION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1203 | T2-18 DO YOU USE OR REFER TO STIMULATED EMISSION | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| T1204 | T2-19 DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| T1205 | T2-20 DO YOU USE OR REFER TO INVERSION LEVEL | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1206 | T2-21 DO YOU USE OR REFER TO MONOCHROMATIC | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | |
| T1207 | T2-22 DO YOU WORK WITH ACTIVE MATERIALS | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | |
| T1208 | T2-23 DO YOU WORK WITH PUMPING SOURCES | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| T1209 | T2-24 DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| T1210 | T2-25 DO YOU WORK WITH HALF SILVERED (92% REFLECTIVE) MIRRORS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1211 | T2-26 DO YOU WORK WITH HELICAL FLASHTUBES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1212 | T2-27 DO YOU WORK WITH RUBY | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1213 | T2-28 DO YOU WORK WITH HELIUM-NEON | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| T1214 | T2-29 DO YOU WORK WITH HELIUM-XENON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1215 | T2-30 DO YOU WORK WITH XENON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1216 | T2-31 DO YOU WORK WITH CESIUM-HELIUM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1217 | T2-32 DO YOU WORK WITH ARGON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1218 | T2-33 DO YOU WORK WITH NEODYMIUM IN GLASS | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | |
| T1219 | T2-34 DO YOU WORK WITH GALLIUM ARSENIDE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1220 | T3-01 IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE (DVST) OR MULTIPLE MODE | 24 | 32 | 19 | 30 | 4 | 0 | 6 | 0 | |
| T1221 | T3-02 DO YOU INSPECT DVST OR MMST | 21 | 27 | 17 | 26 | 3 | 0 | 4 | 0 | |
| T1222 | T3-03 DO YOU CLEAN DVST OR MMST | 18 | 24 | 14 | 24 | 3 | 0 | 4 | 0 | |
| T1223 | T3-04 DO YOU ADJUST OR CALIBRATE DVST OR MMST | 15 | 19 | 12 | 21 | 3 | 0 | 4 | 0 | |
| T1224 | T3-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST | 21 | 25 | 17 | 28 | 4 | 0 | 6 | 0 | DISPLAY TUBES |
| T1225 | T3-06 DO YOU TROUBLESHOOT DVST OR MMST CIRCUITS | 16 | 21 | 13 | 20 | 3 | 0 | 4 | 0 | |
| T1226 | T3-07 DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS | 20 | 24 | 16 | 26 | 3 | 0 | 4 | 0 | |
| T1227 | T3-08 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DVST | 7 | 5 | 6 | 10 | 1 | 0 | 2 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 022 | SPC 023 | SPC 024 | SPC 025 | SPC 026 | SPC 027 | SPC 028 | SPC 029 | |
|---|---|---|---|---|---|---|---|---|---|---|
| T1228 | T3-09 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF MMST | 3 | 3 | 2 | 6 | 0 | 0 | 0 | 0 | |
| T1229 | T3-10 DO YOU PERFORM TASKS ON FLOOD GUNS | 7 | 11 | 7 | 7 | 1 | 0 | 2 | 0 | |
| T1230 | T3-11 DO YOU PERFORM TASKS ON WRITE GUNS | 10 | 13 | 9 | 12 | 1 | 0 | 2 | 0 | |
| T1231 | T3-12 DO YOU PERFORM TASKS ON ATTACK GUNS | 2 | 6 | 2 | 1 | 0 | 0 | 0 | 0 | |
| T1232 | T3-13 DO YOU PERFORM TASKS ON ERASE GUNS | 8 | 11 | 8 | 8 | 1 | 0 | 2 | 0 | |
| T1233 | T3-14 DO YOU PERFORM TASKS ON STORAGE GRIDS | 7 | 11 | 7 | 7 | 0 | 0 | 0 | 0 | |
| U1234 | U1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING TASKS | 26 | 30 | 26 | 24 | 4 | 0 | 6 | 0 | |
| U1235 | U1-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS | 13 | 17 | 13 | 10 | 3 | 0 | 4 | 0 | |
| U1236 | U1-03 DO YOU USE OR REFER TO PROGRAMS | 22 | 25 | 22 | 18 | 3 | 0 | 4 | 0 | PROGRAMMING |
| U1237 | U1-04 DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS | 17 | 22 | 17 | 14 | 1 | 0 | 2 | 0 | |
| U1238 | U1-05 DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS | 7 | 10 | 7 | 7 | 1 | 0 | 2 | 0 | |
| U1239 | U1-06 DO YOU USE OR REFER TO FOUR SYSTEMS | 2 | 3 | 2 | 2 | 1 | 0 | 2 | 0 | |
| U1240 | U1-07 DO YOU USE OR REFER TO BINARY SYSTEMS | 16 | 17 | 16 | 16 | 4 | 0 | 6 | 0 | |
| U1241 | U1-08 DO YOU USE OR REFER TO TIME-SHARING | 12 | 16 | 11 | 12 | 3 | 0 | 4 | 0 | |
| U1242 | U1-09 DO YOU USE OR REFER TO DATA WORDS | 21 | 25 | 21 | 19 | 3 | 0 | 4 | 0 | |
| U1243 | U1-10 DO YOU USE OR REFER TO ADDRESS WORDS | 23 | 27 | 22 | 24 | 3 | 0 | 4 | 0 | |
| U1244 | U1-11 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS | 19 | 22 | 17 | 20 | 3 | 0 | 4 | 0 | |
| U1245 | U1-12 DO YOU USE OR REFER TO STEERING/INFORMATION | 14 | 16 | 13 | 16 | 3 | 0 | 4 | 0 | |
| U1246 | U1-13 DO YOU USE OR REFER TO INFORMATION WORDS | 20 | 24 | 19 | 21 | 3 | 0 | 4 | 0 | |
| U1247 | U1-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING | 10 | 16 | 9 | 10 | 3 | 0 | 4 | 0 | |
| U1248 | U1-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING | 8 | 14 | 8 | 6 | 3 | 0 | 4 | 0 | |
| U1249 | U1-16 DO YOU PERFORM TASKS ON INPUT DEVICES | 9 | 10 | 10 | 8 | 1 | 0 | 2 | 0 | |
| U1250 | U1-17 DO YOU PERFORM TASKS ON STORAGE DEVICES | 6 | 5 | 9 | 8 | 1 | 0 | 2 | 0 | |
| U1251 | U1-18 DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS | 7 | 5 | 8 | 8 | 1 | 0 | 2 | 0 | |
| U1252 | U1-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS | 9 | 11 | 9 | 8 | 3 | 0 | 4 | 0 | |
| U1253 | U1-20 DO YOU PERFORM TASKS ON OUTPUT DEVICES | 9 | 11 | 9 | 8 | 1 | 0 | 2 | 0 | |
| U1254 | U1-21 DO YOU PERFORM TASKS ON POWER SUPPLIES | 10 | 11 | 10 | 8 | 1 | 0 | 2 | 0 | |
| U1255 | U2-01 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND ATTENUATION | 61 | 52 | 62 | 62 | 86 | 100 | 86 | 84 | |
| U1256 | U2-02 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS | 8 | 5 | 9 | 7 | 14 | 0 | 16 | 11 | DB AND POWER RATIOS |
| U1257 | U2-03 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS | 9 | 6 | 10 | 8 | 14 | 0 | 16 | 11 | |

PERCENT MEMBERS ANSWERING 'YES' TO EPI ITEMS BY DAFSC GROUPS IN THE 326X1 CAREER LADDER.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

| | | |
|---|---|---|
| GROUP IDENTITY = SPC030 | ALL AMN 326X1D | CONTAINING 147 MEMBERS. |
| GROUP IDENTITY = SPC031 | ALL AMN 32631D | CONTAINING 26 MEMBERS. |
| GROUP IDENTITY = SPC032 | ALL AMN 32651D | CONTAINING 83 MEMBERS. |
| GROUP IDENTITY = SPC033 | ALL AMN 32671D | CONTAINING 38 MEMBERS. |
| GROUP IDENTITY = SPC034 | ALL AMN 326X1E | CONTAINING 87 MEMBERS. |
| GROUP IDENTITY = SPC035 | ALL AMN 32631E | CONTAINING 13 MEMBERS. |
| GROUP IDENTITY = SPC036 | ALL AMN 32651E | CONTAINING 51 MEMBERS. |
| GROUP IDENTITY = SPC037 | ALL AMN 32671E | CONTAINING 23 MEMBERS. |

DUTY GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DUTY | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 |
|---|---|---|---|---|---|---|---|---|---|
| A | MATHEMATICS, DIRECT CURRENT, VOLTAGE, AND RESISTANCE | 100 | 100 | 100 | 100 | 98 | 100 | 100 | 91 |
| B | MULTIMETER USES, ALTERNATING CURRENT, INDUCTORS, AND INDUCTIVE | 99 | 100 | 99 | 97 | 99 | 100 | 100 | 96 |
| C | CAPACITORS, CAPACITIVE REACTANCE, TRANSFORMERS, AND MAGNETISM | 84 | 77 | 88 | 82 | 87 | 92 | 84 | 91 |
| D | RCL CIRCUITS, SERIES AND PARALLEL RESONANCE (TIME CONSTANTS), AND FILTERS | 65 | 58 | 65 | 68 | 79 | 85 | 80 | 74 |
| E | COUPLING, SOLDERING, AND RELAYS | 95 | 92 | 95 | 95 | 95 | 100 | 96 | 91 |
| F | MICROPHONES, SPEAKERS, AND OSCILLOSCOPES | 93 | 88 | 98 | 87 | 98 | 100 | 100 | 91 |
| G | SEMICONDUCTOR DIODES, TRANSISTORS, AND TRANSISTOR AMPLIFIERS | 75 | 69 | 75 | 79 | 84 | 85 | 82 | 87 |
| H | SOLID STATE SPECIAL PURPOSE DEVICES, POWER SUPPLIES, AND OSCILLATORS | 91 | 88 | 89 | 97 | 98 | 100 | 98 | 96 |
| I | MULTIVIBRATORS, LIMITERS, CLAMPERS, AND ELECTRON TUBES | 39 | 35 | 33 | 58 | 68 | 85 | 57 | 83 |
| J | ELECTRON TUBE AMPLIFIERS AND CIRCUITS, SPECIAL PURPOSE ELECTRON TUBES, HETERODYNING, MODULATION, | 60 | 58 | 58 | 66 | 83 | 100 | 78 | 83 |
| K | AM SYSTEMS, FM SYSTEMS, AND NUMBERING SYSTEMS | 44 | 27 | 45 | 55 | 61 | 62 | 57 | 70 |
| L | LOGIC FUNCTIONS, BOOLEAN EQUATIONS, AND COUNTERS | 47 | 31 | 48 | 55 | 82 | 77 | 80 | 87 |
| M | TIMING CIRCUITS, USE OF SIGNAL GENERATORS, MOTORS, AND GENERATORS | 81 | 69 | 87 | 76 | 92 | 100 | 92 | 87 |
| N | METER MOVEMENTS, SATURABLE REACTORS, MAGNETIC AMPLIFIERS, AND WAVESHAPING CIRCUITS | 80 | 85 | 80 | 76 | 97 | 100 | 98 | 91 |
| O | SINGLE SIDEBAND SYSTEMS, PULSE MODULATION SYSTEMS, AND ANTENNAS | 52 | 46 | 53 | 53 | 77 | 92 | 71 | 83 |
| P | TRANSMISSION LINES, WAVEGUIDES AND CAVITY RESONATORS, AND MICROWAVE AMPLIFIERS AND OSCILLATORS | 61 | 62 | 57 | 68 | 89 | 92 | 88 | 87 |
| Q | REGISTERS, STORAGE DEVICES, AND DIGITAL TO ANALOG CONVERTERS | 55 | 50 | 54 | 61 | 56 | 62 | 49 | 70 |
| R | PHANTASTRONS, SCHMITT TRIGGERS, AND CABLE FABRICATION | 54 | 38 | 57 | 61 | 74 | 69 | 73 | 78 |
| S | INPUT/OUTPUT DEVICES, PHOTO SENSITIVE DEVICES, AND SYNCHRONOUS VIBRATIONS | 56 | 54 | 54 | 63 | 56 | 69 | 53 | 57 |
| T | INFRARED, LASERS, AND DISPLAY TUBES | 33 | 27 | 28 | 50 | 74 | 92 | 67 | 78 |
| U | PROGRAMMING, DB AND POWER RATIOS | 62 | 58 | 63 | 63 | 83 | 85 | 84 | 78 |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | BY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 1 | A1-01 DO YOU USE AN INSTRUMENT, SUCH AS METER OR AN OSCILLOSCOPE, IN WHICH IT IS NECESSARY TO AMPLIFY OR | 81 | 96 | 83 | 66 | 92 | 92 | 94 | 87 | |
| A | 2 | A1-02 DO YOU USE A PUBLICATION, SUCH AS A TECHNICAL ORDER OR MAINTENANCE MANUAL, IN WHICH IT IS NECESSARY | 39 | 42 | 43 | 29 | 62 | 54 | 63 | 65 | MATHEMATICS |
| A | 3 | A1-03 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS. | 22 | 27 | 23 | 16 | 40 | 46 | 39 | 39 | |
| A | 4 | A1-04 DO YOU FIND THE SQUARE ROOT OF A QUANTITY. | 7 | 12 | 6 | 8 | 9 | 23 | 8 | 4 | |
| A | 5 | A1-05 DO YOU SOLVE FOR AN UNKNOWN QUANTITY. | 20 | 19 | 22 | 16 | 26 | 46 | 24 | 22 | |
| A | 6 | A1-06 DO YOU CONVERT NUMBERS TO LOGARITHMS. | 3 | 4 | 1 | 5 | 3 | 8 | 0 | 9 | |
| A | 7 | A1-07 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS. | 5 | 8 | 2 | 8 | 7 | 8 | 4 | 13 | |
| A | 8 | A1-08 DO YOU SOLVE QUADRATIC EQUATIONS. | 3 | 4 | 2 | 3 | 2 | 8 | 0 | 4 | |
| A | 9 | A1-09 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS (THIS IS THE LOGARITHM SYSTEM WHICH USES THE NUMBER 2.718 AS | 4 | 4 | 2 | 8 | 0 | 0 | 0 | 0 | |
| A | 10 | A1-10 DO YOU WORK WITH VECTOR QUANTITIES, SUCH AS ADDING OR SUBTRACTING TWO VECTORS. | 7 | 4 | 6 | 11 | 7 | 15 | 6 | 4 | |
| A | 11 | A1-11 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT. | 20 | 8 | 20 | 26 | 9 | 15 | 8 | 9 | |
| A | 12 | A1-12 DO YOU DETERMINE AREAS OF PLANE FIGURES, SUCH AS AREAS OF CIRCLES OR TRIANGLES. | 2 | 0 | 0 | 8 | 1 | 0 | 2 | 0 | |
| A | 13 | A1-13 DO YOU SOLVE OR USE SIMULTANEOUS EQUATIONS. | 6 | 8 | 4 | 11 | 3 | 0 | 4 | 4 | |
| A | 14 | A1-14 DO YOU SOLVE OR USE PROPORTIONS. | 15 | 12 | 14 | 18 | 21 | 15 | 24 | 17 | |
| A | 15 | A2-01 DO YOU USE THE TERM VOLTAGE OR VOLT. | 97 | 100 | 95 | 100 | 98 | 100 | 100 | 91 | |
| A | 16 | A2-02 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF). | 24 | 27 | 20 | 29 | 26 | 31 | 25 | 26 | |
| A | 17 | A2-03 DO YOU USE THE TERM OHM. | 97 | 100 | 94 | 100 | 95 | 92 | 100 | 87 | |
| A | 18 | A2-04 DO YOU USE THE TERM ION. | 7 | 8 | 4 | 13 | 9 | 15 | 8 | 9 | DIRECT CURRENT AND VOLTAGE |
| A | 19 | A2-05 DO YOU USE THE TERM DYNE. | 3 | 0 | 2 | 8 | 5 | 8 | 4 | 4 | |
| A | 20 | A2-06 DO YOU USE THE TERM AMPERE. | 86 | 92 | 86 | 84 | 87 | 85 | 88 | 87 | |
| A | 21 | A2-07 DO YOU USE THE TERM NEUTRON. | 7 | 12 | 5 | 8 | 8 | 15 | 6 | 9 | |
| A | 22 | A2-08 DO YOU USE THE TERM COULOMB. | 8 | 8 | 5 | 16 | 11 | 15 | 12 | 9 | |
| A | 23 | A2-09 DO YOU USE THE TERM PROTON. | 7 | 12 | 5 | 11 | 10 | 23 | 8 | 9 | |
| A | 24 | A3-01 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB. | 79 | 65 | 83 | 79 | 80 | 69 | 84 | 78 | |
| A | 25 | A3-02 DO YOU INSPECT RESISTORS. | 85 | 81 | 88 | 82 | 77 | 77 | 76 | 78 | |
| A | 26 | A3-03 DO YOU CLEAN RESISTORS. | 41 | 19 | 48 | 39 | 49 | 38 | 57 | 39 | |
| A | 27 | A3-04 DO YOU ADJUST RESISTORS. | 80 | 65 | 86 | 76 | 90 | 77 | 92 | 91 | RESISTANCE |
| A | 28 | A3-05 DO YOU CHECK OHMIC VALUE OF RESISTORS. | 78 | 65 | 82 | 76 | 79 | 69 | 82 | 78 | |
| A | 29 | A3-06 DO YOU REMOVE OR REPLACE RESISTORS. | 69 | 50 | 73 | 74 | 66 | 46 | 69 | 70 | |
| A | 30 | A3-07 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS IN YOUR PRESENT JOB. | 14 | 8 | 12 | 24 | 20 | 23 | 18 | 22 | |
| A | 31 | A3-08 DO YOU USE OR REFER TO RESISTOR SYMBOLS, SUCH AS FOR FIXED RESISTORS OR FOR TAPPED RESISTORS. | 68 | 50 | 72 | 71 | 84 | 85 | 80 | 91 | |
| A | 32 | A3-09 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FIXED WIRE, SLIDE TAP, RHEOSTAT OR | 61 | 50 | 63 | 63 | 76 | 85 | 71 | 83 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 33 | A3-10 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE OHMIC VALUE OF RESISTANCE. | 63 | 50 | 66 | 66 | 79 | 77 | 82 | 74 | |
| A | 34 | A3-11 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE TOLERANCE OF RESISTORS. | 50 | 35 | 49 | 63 | 68 | 69 | 67 | 70 | |
| A | 35 | A3-12 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE FAILURE RATE OF RESISTORS. | 7 | 4 | 7 | 8 | 16 | 23 | 18 | 9 | |
| A | 36 | A3-13 DO YOU MAKE DECISIONS IN WHICH YOU MUST DETERMINE HOW TWO OR MORE BATTERIES MUST BE CONNECTED TOGETHER TO | 9 | 8 | 7 | 13 | 13 | 8 | 16 | 9 | |
| A | 37 | A3-14 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT ANY OF THE FOLLOWING COMPONENTS: BATTERY, | 76 | 73 | 81 | 68 | 90 | 85 | 92 | 87 | |
| A | 38 | A3-15 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS. | 29 | 23 | 30 | 32 | 43 | 31 | 41 | 52 | |
| A | 39 | A3-16 DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS. | 22 | 15 | 23 | 26 | 40 | 31 | 39 | 48 | |
| A | 40 | A3-17 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS. | 24 | 15 | 24 | 32 | 40 | 38 | 39 | 43 | |
| A | 41 | A3-18 DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS. | 13 | 12 | 12 | 16 | 30 | 23 | 25 | 43 | |
| A | 42 | A3-19 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS. | 24 | 12 | 25 | 29 | 41 | 38 | 39 | 48 | |
| A | 43 | A3-20 DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS. | 19 | 12 | 20 | 21 | 36 | 23 | 35 | 43 | |
| A | 44 | A3-21 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS. | 21 | 12 | 22 | 26 | 37 | 23 | 37 | 43 | |
| A | 45 | A3-22 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS. | 19 | 12 | 20 | 21 | 34 | 23 | 35 | 39 | |
| A | 46 | A3-23 DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS. | 12 | 8 | 12 | 16 | 29 | 15 | 27 | 39 | |
| A | 47 | A3-24 DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS. | 24 | 12 | 27 | 29 | 38 | 31 | 35 | 48 | |
| A | 48 | A3-25 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS. | 19 | 8 | 20 | 24 | 36 | 31 | 35 | 39 | |
| A | 49 | A3-26 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS. | 21 | 12 | 22 | 26 | 36 | 23 | 35 | 43 | |
| A | 50 | A3-27 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS. | 18 | 8 | 20 | 21 | 31 | 15 | 31 | 39 | |
| A | 51 | A3-28 DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS. | 11 | 8 | 10 | 16 | 25 | 15 | 24 | 35 | |
| B | 52 | B1-01 DO YOU MEASURE RESISTANCE. | 86 | 92 | 88 | 84 | 92 | 92 | 92 | 91 | |
| B | 53 | B1-02 DO YOU REPAIR AN OHMMETER. | 3 | 4 | 4 | 3 | 1 | 8 | 0 | 0 | |
| B | 54 | B1-03 DO YOU MEASURE VOLTAGE. | 88 | 88 | 99 | 84 | 95 | 85 | 100 | 91 | |
| B | 55 | B1-04 DO YOU REPAIR A VOLTMETER. | 3 | 4 | 2 | 3 | 1 | 8 | 0 | 0 | MULTIMETER USES |
| B | 56 | B1-05 DO YOU REPAIR AN AMMETER. | 3 | 4 | 2 | 3 | 1 | 8 | 0 | 0 | |
| B | 57 | B1-06 DO YOU MEASURE CURRENT. | 65 | 77 | 59 | 68 | 76 | 85 | 78 | 65 | |
| B | 58 | B1-07 DO YOU USE A MULTIMETER. | 88 | 92 | 92 | 79 | 93 | 77 | 96 | 96 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B | 59 | B1-08 DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB. | 4 | 8 | 4 | 3 | 3 | 8 | 4 | 0 | |
| B | 60 | B1-07 DO YOU READ SCHEMATICS. | 89 | 88 | 93 | 82 | 93 | 85 | 94 | 96 | |
| B | 61 | B2-01 DO YOU USE OR REFER THE TERM EFFECTIVE VOLTAGE (RMS). | 74 | 54 | 77 | 82 | 71 | 46 | 76 | 74 | ALTERNATING CURRENT |
| B | 62 | B2-02 DO YOU USE OR REFER THE TERM PEAK TO PEAK VOLTAGE. | 89 | 92 | 90 | 84 | 92 | 85 | 94 | 91 | |
| B | 63 | B2-03 DO YOU USE OR REFER THE TERM AVERAGE VOLTAGE (DC). | 78 | 81 | 81 | 68 | 70 | 69 | 71 | 70 | |
| B | 64 | B2-04 DO YOU USE OR REFER THE TERM WAVE LENGTH. | 65 | 73 | 69 | 50 | 66 | 62 | 69 | 61 | |
| B | 65 | B2-05 DO YOU USE OR REFER THE TERM FREQUENCY. | 91 | 96 | 93 | 84 | 89 | 77 | 92 | 87 | |
| B | 66 | B2-06 DO YOU USE OR REFER THE TERM INSTANTANEOUS VALUE. | 34 | 27 | 34 | 39 | 26 | 31 | 29 | 17 | |
| B | 67 | B3-01 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB. | 63 | 58 | 61 | 71 | 61 | 62 | 57 | 70 | |
| B | 68 | B3-02 DO YOU INSPECT INDUCTORS. | 54 | 46 | 54 | 61 | 45 | 23 | 45 | 57 | |
| B | 69 | B3-03 DO YOU CLEAN INDUCTORS. | 26 | 15 | 28 | 29 | 24 | 8 | 31 | 17 | INDUCTORS AND INDUCTIVE REACTANCE |
| B | 70 | B3-04 DO YOU ADJUST INDUCTORS. | 29 | 31 | 27 | 34 | 31 | 23 | 33 | 30 | |
| B | 71 | B3-05 DO YOU REMOVE OR REPLACE INDUCTORS. | 34 | 31 | 34 | 37 | 34 | 15 | 35 | 43 | |
| B | 72 | B3-06 DO YOU USE OR REFER TO INDUCTANCE. | 31 | 12 | 31 | 42 | 38 | 15 | 41 | 43 | |
| B | 73 | B3-07 DO YOU USE OR REFER TO HENRIES. | 21 | 12 | 18 | 34 | 28 | 15 | 29 | 30 | |
| B | 74 | B3-08 DO YOU USE OR REFER TO INDUCTIVE REACTANCE. | 22 | 12 | 20 | 34 | 25 | 8 | 25 | 35 | |
| B | 75 | B3-09 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS. | 1 | 0 | 1 | 3 | 1 | 0 | 2 | 0 | |
| B | 76 | B3-10 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS. | 4 | 4 | 4 | 5 | 5 | 15 | 4 | 0 | |
| B | 77 | B3-11 DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS. | 3 | 0 | 4 | 5 | 5 | 8 | 4 | 4 | |
| B | 78 | B3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE | 3 | 4 | 1 | 5 | 5 | 8 | 6 | 0 | |
| B | 79 | B3-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE | 3 | 4 | 2 | 5 | 2 | 0 | 4 | 0 | |
| B | 80 | B3-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO | 2 | 4 | 0 | 5 | 5 | 8 | 4 | 4 | |
| B | 81 | B3-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE | 2 | 4 | 0 | 5 | 5 | 8 | 4 | 4 | |
| B | 82 | B3-16 DO YOU CALCULATE INDUCTANCE FOR A PARTICULAR INDUCTOR USING FORMULAS. | 2 | 4 | 1 | 3 | 6 | 15 | 4 | 4 | |
| B | 83 | B3-17 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES. | 3 | 8 | 0 | 8 | 10 | 8 | 12 | 9 | |
| B | 84 | B3-18 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL. | 3 | 8 | 0 | 8 | 11 | 15 | 12 | 9 | |
| B | 85 | B3-19 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES-PARALLEL CIRCUITS. | 3 | 8 | 0 | 8 | 10 | 8 | 12 | 9 | |
| B | 86 | B3-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS. | 14 | 8 | 10 | 26 | 25 | 15 | 27 | 26 | |
| B | 87 | B3-21 DO YOU CALCULATE INDUCTIVE REACTANCE. | 4 | 8 | 1 | 8 | 10 | 8 | 10 | 13 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | | BY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 03A | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | 88 | B3-22 | DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO | 8 | 8 | 7 | 11 | 22 | 15 | 22 | 26 | |
| B | 89 | B3-23 | DO YOU WORK WITH POWER INDUCTORS. | 29 | 19 | 30 | 34 | 31 | 38 | 33 | 22 | |
| B | 90 | B3-24 | DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS. | 24 | 19 | 23 | 32 | 23 | 31 | 20 | 26 | |
| B | 91 | B3-25 | DO YOU WORK WITH RADIO FREQUENCY INDUCTORS. | 37 | 31 | 37 | 42 | 44 | 38 | 39 | 57 | |
| C | 92 | C1-01 | DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS ON YOUR PRESENT JOB. | 68 | 69 | 66 | 71 | 76 | 77 | 76 | 74 | |
| C | 93 | C1-02 | DO YOU INSPECT CAPACITORS. | 69 | 58 | 71 | 71 | 56 | 31 | 59 | 65 | CAPACITORS AND |
| C | 94 | C1-03 | DO YOU CLEAN CAPACITORS. | 35 | 19 | 42 | 32 | 34 | 15 | 43 | 26 | CAPACITIVE REACTANCE |
| C | 95 | C1-04 | DO YOU ADJUST CAPACITORS. | 35 | 27 | 35 | 42 | 46 | 46 | 47 | 43 | |
| C | 96 | C1-05 | DO YOU TEST CAPACITORS. | 46 | 23 | 48 | 58 | 39 | 15 | 45 | 39 | |
| C | 97 | C1-06 | DO YOU DISCHARGE CAPACITORS. | 33 | 23 | 40 | 26 | 52 | 38 | 51 | 61 | |
| C | 98 | C1-07 | DO YOU REMOVE OR REPLACE CAPACITORS. | 50 | 35 | 55 | 50 | 45 | 23 | 41 | 65 | |
| C | 99 | C1-08 | DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE. | 5 | 4 | 4 | 8 | 8 | 8 | 6 | 13 | |
| C | 100 | C1-09 | DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC. | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| C | 101 | C1-10 | DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS. | 46 | 35 | 43 | 58 | 59 | 54 | 55 | 70 | |
| C | 102 | C1-11 | DO YOU USE OR REFER TO CAPACITANCE. | 54 | 38 | 57 | 58 | 61 | 38 | 63 | 70 | |
| C | 103 | C1-12 | DO YOU USE OR REFER TO DIELECTRIC CONSTANT. | 4 | 0 | 6 | 3 | 11 | 8 | 12 | 13 | |
| C | 104 | C1-13 | DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS. | 26 | 8 | 29 | 32 | 39 | 38 | 41 | 35 | |
| C | 105 | C1-14 | DO YOU USE OR REFER TO CAPACITIVE REACTANCE. | 14 | 4 | 14 | 18 | 26 | 15 | 24 | 39 | |
| C | 106 | C1-15 | DO YOU USE OR REFER TO CAPACITOR COLOR CODES. | 14 | 8 | 16 | 16 | 22 | 15 | 20 | 30 | |
| C | 107 | C1-16 | THE CAPACITORS YOU WORK WITH IN DC CIRCUITS. | 65 | 62 | 64 | 71 | 72 | 54 | 73 | 83 | |
| C | 108 | C1-17 | THE CAPACITORS YOU WORK WITH ARE IN AC CIRCUITS. | 64 | 58 | 65 | 66 | 68 | 54 | 69 | 74 | |
| C | 109 | C1-18 | THE CAPACITORS YOU WORK WITH ARE IN CIRCUITS WITH BOTH DC AND AC. | 63 | 46 | 63 | 74 | 67 | 54 | 67 | 74 | |
| C | 110 | C1-19 | THE CAPACITORS YOU WORK WITH ARE DONT REMEMBER WHICH CIRCUITS. | 16 | 31 | 16 | 8 | 14 | 8 | 16 | 13 | |
| C | 111 | C1-20 | DO YOU CALCULATE CAPACITANCE FOR A PARTICULAR CAPACITOR USING FORMULAS. | 1 | 0 | 1 | 3 | 3 | 8 | 4 | 0 | |
| C | 112 | C1-21 | DO YOU USE OR REFER TO THE GENERAL RULE THAT THE CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL | 0 | 0 | 0 | 0 | 7 | 8 | 6 | 9 | |
| C | 113 | C1-22 | DO YOU USE OR REFER TO THE GENERAL RULE THAT THE CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL | 0 | 0 | 0 | 0 | 6 | 0 | 4 | 13 | |
| C | 114 | C1-23 | DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES. | 8 | 8 | 7 | 11 | 13 | 8 | 14 | 13 | |
| C | 115 | C1-24 | DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL. | 8 | 8 | 7 | 11 | 13 | 8 | 14 | 13 | |
| C | 116 | C1-25 | DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS. | 7 | 8 | 6 | 11 | 13 | 15 | 12 | 13 | |
| C | 117 | C1-26 | DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY | 17 | 8 | 19 | 18 | 28 | 23 | 27 | 30 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| C 118 | C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS. | 12 | 4 | 10 | 24 | 18 | 15 | 20 | 17 | |
| C 119 | C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO | 6 | 4 | 5 | 11 | 17 | 8 | 18 | 22 | |
| C 120 | C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE. | 4 | 4 | 4 | 5 | 11 | 15 | 10 | 13 | |
| C 121 | C1-30 DO YOU WORK WITH ROTOR-STATOR CAPACITORS (VARIABLE). | 25 | 19 | 19 | 42 | 32 | 31 | 37 | 22 | |
| C 122 | C1-31 DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS. | 22 | 15 | 20 | 32 | 21 | 23 | 18 | 26 | |
| C 123 | C1-32 DO YOU WORK WITH ELECTROLYTIC CAPACITORS (FIXED). | 52 | 35 | 49 | 68 | 61 | 38 | 59 | 78 | |
| C 124 | C1-33 DO YOU WORK WITH PAPER CAPACITORS (FIXED). | 43 | 19 | 41 | 63 | 46 | 23 | 45 | 61 | |
| C 125 | C1-34 DO YOU WORK WITH MICA CAPACITORS (FIXED). | 46 | 27 | 42 | 68 | 54 | 38 | 51 | 70 | |
| C 126 | C1-35 DO YOU WORK WITH CERAMIC CAPACITORS (FIXED). | 47 | 35 | 42 | 66 | 54 | 31 | 51 | 74 | |
| C 127 | C1-36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS. | 24 | 31 | 31 | 5 | 18 | 23 | 22 | 9 | |
| C 128 | C2-01 DO YOU WORK WITH TRANSFORMERS ON YOUR PRESENT JOB. | 71 | 50 | 78 | 68 | 69 | 62 | 67 | 78 | |
| C 129 | C2-02 DO YOU INSPECT TRANSFORMERS. | 67 | 50 | 71 | 68 | 49 | 23 | 55 | 52 | |
| C 130 | C2-03 DO YOU CLEAN TRANSFORMERS. | 35 | 15 | 47 | 24 | 29 | 8 | 33 | 30 | |
| C 131 | C2-04 DO YOU ADJUST TRANSFORMERS. | 26 | 19 | 27 | 29 | 29 | 46 | 25 | 26 | |
| C 132 | C2-05 DO YOU TROUBLESHOOT TRANSFORMERS. | 48 | 38 | 49 | 50 | 46 | 31 | 45 | 57 | TRANSFORMERS |
| C 133 | C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS. | 57 | 46 | 65 | 47 | 49 | 38 | 49 | 57 | |
| C 134 | C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING. | 3 | 0 | 4 | 3 | 2 | 15 | 0 | 0 | |
| C 135 | C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (M). | 1 | 0 | 1 | 3 | 5 | 8 | 6 | 0 | |
| C 136 | C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M. | 1 | 0 | 1 | 3 | 3 | 8 | 2 | 4 | |
| C 137 | C2-10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS. | 2 | 0 | 2 | 3 | 7 | 15 | 6 | 4 | |
| C 138 | C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS. | 3 | 0 | 2 | 5 | 8 | 8 | 8 | 9 | |
| C 139 | C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS. | 3 | 0 | 2 | 5 | 6 | 15 | 4 | 4 | |
| C 140 | C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS. | 2 | 0 | 2 | 3 | 6 | 15 | 6 | 0 | |
| C 141 | C2-14 DO YOU WORK WITH AUTOTRANSFORMERS. | 21 | 23 | 18 | 26 | 24 | 23 | 18 | 39 | |
| C 142 | C2-15 DO YOU WORK WITH POWER TRANSFORMERS. | 56 | 31 | 59 | 68 | 54 | 31 | 53 | 70 | |
| C 143 | C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS. | 29 | 15 | 29 | 32 | 28 | 15 | 29 | 30 | |
| C 144 | C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS. | 36 | 27 | 35 | 45 | 43 | 31 | 43 | 48 | |
| C 145 | C2-18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMER. | 20 | 35 | 23 | 5 | 15 | 15 | 16 | 13 | |
| C 146 | C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE. | 49 | 23 | 55 | 53 | 52 | 23 | 49 | 74 | |
| C 147 | C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE. | 46 | 23 | 51 | 50 | 51 | 23 | 49 | 70 | |
| C 148 | C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES. | 42 | 23 | 46 | 47 | 38 | 23 | 35 | 52 | |
| C 149 | C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR | 8 | 0 | 11 | 8 | 13 | 15 | 14 | 9 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| C 150 | C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP- | 15 | 8 | 18 | 13 | 16 | 15 | 14 | 22 | |
| C 151 | C2-24 DO YOU REFER TO THE BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS. | 59 | 42 | 64 | 61 | 61 | 46 | 61 | 70 | |
| C 152 | C2-25 DO YOU REFER TO THE MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS. | 48 | 31 | 49 | 58 | 46 | 38 | 43 | 57 | |
| C 153 | C2-26 DO YOU REFER TO THE MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS. | 50 | 31 | 51 | 61 | 48 | 38 | 47 | 57 | |
| C 154 | C2-27 DO YOU REFER TO THE CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS. | 52 | 31 | 54 | 61 | 54 | 46 | 51 | 65 | |
| C 155 | C2-28 DO YOU REFER TO THE AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS. | 30 | 15 | 34 | 32 | 34 | 38 | 35 | 30 | |
| C 156 | C2-29 DO YOU REFER TO THE IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS. | 31 | 15 | 35 | 32 | 41 | 38 | 43 | 39 | |
| C 157 | C2-30 DO YOU REFER TO THE COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS. | 47 | 27 | 55 | 42 | 46 | 38 | 49 | 43 | |
| C 158 | C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING | 20 | 15 | 17 | 32 | 24 | 15 | 24 | 30 | |
| C 159 | C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH. | 7 | 8 | 6 | 8 | 15 | 8 | 18 | 13 | |
| C 160 | C2-33 DO YOU REFER TO OR USE THE GENERAL RULE THAT THE TURNS RATIO OF A TRANSFORMER IS EQUAL TO THE VOLTAGE | 7 | 4 | 7 | 11 | 14 | 8 | 18 | 9 | |
| C 161 | C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS. | 17 | 8 | 16 | 26 | 16 | 8 | 16 | 17 | |
| C 162 | C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS. | 5 | 0 | 6 | 5 | 5 | 8 | 6 | 0 | |
| C 163 | C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS. | 3 | 0 | 4 | 3 | 3 | 8 | 4 | 0 | |
| C 164 | C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH 3 PHASE TRANSFORMERS. | 35 | 27 | 33 | 47 | 40 | 31 | 37 | 52 | |
| C 165 | C2-38 DO YOU INSPECT 3 PHASE TRANSFORMERS. | 35 | 27 | 33 | 45 | 34 | 8 | 41 | 35 | |
| C 166 | C2-39 DO YOU CLEAN OR LUBRICATE 3 PHASE TRANSFORMERS. | 10 | 4 | 10 | 13 | 9 | 15 | 12 | 0 | |
| C 167 | C2-40 DO YOU ADJUST 3 PHASE TRANSFORMERS. | 10 | 12 | 10 | 8 | 13 | 23 | 10 | 13 | |
| C 168 | C2-41 DO YOU TROUBLESHOOT 3 PHASE TRANSFORMERS. | 22 | 12 | 20 | 32 | 29 | 8 | 31 | 35 | |
| C 169 | C2-42 DO YOU REMOVE OR REPLACE COMPLETE 3 PHASE TRANSFORMER. | 26 | 15 | 28 | 29 | 28 | 15 | 29 | 30 | |
| C 170 | C2-43 DO YOU REMOVE OR REPLACE 3 PHASE TRANSFORMER PARTS, SUCH AS A WINDING. | 1 | 0 | 1 | 3 | 2 | 15 | 0 | 0 | |
| C 171 | C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS. | 36 | 27 | 40 | 34 | 24 | 31 | 27 | 13 | |
| C 172 | C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS. | 20 | 15 | 20 | 24 | 14 | 31 | 14 | 4 | |
| C 173 | C3-03 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS. | 3 | 0 | 5 | 3 | 5 | 15 | 4 | 0 | MAGNETISM |
| C 174 | C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS. | 3 | 0 | 5 | 0 | 6 | 23 | 4 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | Dy=TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C | 175 | C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS. | 4 | 4 | 6 | 0 | 6 | 15 | 6 | 0 | |
| C | 176 | C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM. | 4 | 0 | 5 | 5 | 7 | 23 | 4 | 4 | |
| C | 177 | C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX. | 14 | 12 | 17 | 8 | 11 | 23 | 8 | 13 | |
| C | 178 | C3-08 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM. | 1 | 0 | 1 | 0 | 3 | 8 | 2 | 4 | |
| C | 179 | C3-09 DO YOU USE OR REFER TO THE DOMAIN THEORY OF MAGNETISM. | 2 | 4 | 2 | 0 | 3 | 15 | 0 | 4 | |
| C | 180 | C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION. | 10 | 8 | 11 | 8 | 13 | 15 | 10 | 17 | |
| C | 181 | C3-11 DO YOU USE OR REFER TO FLUX DENSITY. | 5 | 4 | 5 | 5 | 6 | 15 | 6 | 0 | |
| C | 182 | C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES | 25 | 19 | 25 | 29 | 28 | 46 | 25 | 22 | |
| C | 183 | C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES. | 7 | 8 | 8 | 5 | 14 | 15 | 14 | 13 | |
| C | 184 | C3-14 DO YOU USE THE LEFT THUMB RULE TO FIND THE NORTH POLE OF A CURRENT CARRYING COIL. | 5 | 8 | 5 | 5 | 14 | 31 | 8 | 17 | |
| D | 185 | D1-01 DO YOU WORK WITH RC, LR, OR RCL CIRCUITS ON YOUR PRESENT JOB. | 37 | 31 | 35 | 47 | 49 | 46 | 51 | 48 | |
| D | 186 | D1-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS. | 6 | 8 | 5 | 8 | 9 | 15 | 8 | 9 | RCL CIRCUITS |
| D | 187 | D1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS. | 3 | 8 | 2 | 3 | 3 | 0 | 4 | 4 | |
| D | 188 | D1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS. | 7 | 12 | 5 | 11 | 8 | 8 | 8 | 9 | |
| D | 189 | D1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS. | 7 | 12 | 5 | 11 | 7 | 8 | 6 | 9 | |
| D | 190 | D1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS. | 7 | 8 | 5 | 11 | 7 | 8 | 6 | 9 | |
| D | 191 | D1-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS. | 18 | 15 | 17 | 21 | 29 | 23 | 29 | 30 | |
| D | 192 | D1-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS. | 9 | 15 | 6 | 11 | 16 | 0 | 18 | 22 | |
| D | 193 | D1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN WORKING WITH RCL CIRCUITS. | 11 | 15 | 8 | 13 | 18 | 15 | 18 | 22 | |
| D | 194 | D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS. | 16 | 15 | 12 | 24 | 22 | 23 | 22 | 22 | |
| D | 195 | D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS. | 8 | 15 | 5 | 11 | 14 | 8 | 18 | 9 | |
| D | 196 | D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS. | 6 | 8 | 4 | 11 | 10 | 8 | 14 | 4 | |
| D | 197 | D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS. | 19 | 15 | 16 | 29 | 29 | 15 | 35 | 22 | |
| D | 198 | D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS. | 25 | 19 | 22 | 37 | 41 | 46 | 41 | 39 | |
| D | 199 | D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS. | 21 | 19 | 17 | 32 | 34 | 38 | 35 | 30 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | DY-TSK | | | | | | | | |
| D | 200 | DI-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS. | 27 | 19 | 24 | 37 | 31 | 23 | 37 | 22 |
| D | 201 | DI-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS. | 18 | 15 | 13 | 29 | 26 | 38 | 25 | 22 |
| D | 202 | DI-18 DO YOU USE OR REFER TO BRANDPASS REGION WHEN WORKING WITH RCL CIRCUITS. | 16 | 19 | 12 | 24 | 32 | 23 | 37 | 26 |
| D | 203 | DI-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS. | 7 | 12 | 5 | 8 | 17 | 15 | 18 | 17 |
| D | 204 | DI-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS. | 20 | 19 | 14 | 34 | 36 | 31 | 39 | 30 |
| D | 205 | DI-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS; SINE OF AN ANGLE = OPPOSITE SIDE | 3 | 0 | 1 | 8 | 1 | 0 | 2 | 0 |
| D | 206 | DI-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS. | 3 | 0 | 6 | 0 | 2 | 0 | 4 | 0 |
| D | 207 | DI-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS. | 2 | 4 | 2 | 0 | 8 | 15 | 6 | 9 |
| D | 208 | DI-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS. | 1 | 0 | 1 | 0 | 5 | 8 | 2 | 9 |
| D | 209 | DI-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS. | 1 | 4 | 1 | 0 | 8 | 15 | 8 | 4 |
| D | 210 | DI-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS. | 1 | 4 | 0 | 0 | 5 | 15 | 2 | 4 |
| D | 211 | DI-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS. | 1 | 4 | 0 | 3 | 6 | 15 | 6 | 0 |
| D | 212 | DI-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS. | 1 | 4 | 0 | 3 | 6 | 8 | 6 | 4 |
| D | 213 | DI-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS. | 1 | 0 | 0 | 5 | 7 | 15 | 6 | 4 |
| D | 214 | DI-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS. | 1 | 4 | 0 | 0 | 7 | 0 | 10 | 4 |
| D | 215 | DI-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS. | 0 | 0 | 0 | 0 | 3 | 8 | 2 | 4 |
| D | 216 | DI-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD. | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 4 |
| D | 217 | DI-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW. | 1 | 4 | 0 | 0 | 6 | 0 | 6 | 9 |
| D | 218 | DI-34 DO YOU CHECK CAPACITORS USING OHMMETERS. | 27 | 12 | 28 | 37 | 32 | 23 | 35 | 30 |
| D | 219 | DI-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION. | 12 | 4 | 13 | 13 | 23 | 15 | 25 | 22 |
| D | 220 | DI-36 DO YOU CHECK INDUCTORS USING OHMMETERS. | 29 | 12 | 23 | 37 | 28 | 8 | 31 | 30 |
| D | 221 | DI-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION. | 11 | 4 | 13 | 11 | 21 | 15 | 22 | 22 |
| D | 222 | DI-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT THETA=0, PF=1, AND PA=PT FOR RESONANT CIRCUITS. | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| D | 223 | DI-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS. | 3 | 4 | 4 | 3 | 9 | 15 | 8 | 9 |
| D | 224 | DI-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE | 5 | 4 | 2 | 13 | 19 | 15 | 16 | 9 |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| D 225 | D1-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT | 6 | 4 | 4 | 13 | 13 | 15 | 14 | 9 | |
| D 226 | D1-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK | 19 | 19 | 17 | 24 | 22 | 38 | 20 | 17 | |
| D 227 | D1-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q. | 7 | 4 | 6 | 11 | 13 | 8 | 14 | 13 | |
| D 228 | D1-44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT | 4 | 0 | 4 | 8 | 10 | 15 | 12 | 4 | |
| D 229 | D2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH, USE, OR REFER TO SERIES OR PARALLEL RESONANCE CIRCUITS OR | 17 | 12 | 16 | 24 | 29 | 31 | 27 | 30 | |
| D 230 | D2-02 DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS. | 14 | 12 | 14 | 13 | 20 | 23 | 16 | 26 | SERIES AND PARALLEL RESONANCE (TIME CONSTANTS) |
| D 231 | D2-03 DO YOU WORK WITH, USE, OR REFER TO AVAILABLE VOLTAGE. | 7 | 0 | 8 | 8 | 8 | 8 | 6 | 13 | |
| D 232 | D2-04 DO YOU WORK WITH, USE, OR REFER TO TRANSIENT INTERVALS. | 7 | 4 | 6 | 13 | 9 | 15 | 8 | 9 | |
| D 233 | D2-05 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE | 10 | 4 | 11 | 13 | 17 | 31 | 14 | 17 | |
| D 234 | D2-06 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS. | 1 | 0 | 1 | 3 | 2 | 8 | 0 | 4 | |
| D 235 | D2-07 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUITS CURRENT OR COMPONENT VOLTAGES AFTER A | 1 | 4 | 0 | 3 | 6 | 8 | 4 | 9 | |
| D 236 | D2-08 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE THE TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT | 3 | 0 | 2 | 8 | 8 | 15 | 8 | 4 | |
| D 237 | D2-09 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND | 3 | 0 | 1 | 11 | 6 | 8 | 6 | 4 | |
| D 238 | D2-10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IN LR CIRCUITS REACHES ITS MINIMUM VALUE (OR | 5 | 0 | 6 | 5 | 13 | 31 | 8 | 13 | |
| D 239 | D3-01 DO YOU WORK WITH CIRCUITS USED AS FILTERS ON YOUR PRESENT JOB. | 51 | 50 | 52 | 50 | 71 | 62 | 75 | 70 | |
| D 240 | D3-02 DO YOU INSPECT FILTER CIRCUITS. | 47 | 46 | 46 | 50 | 51 | 38 | 59 | 39 | FILTERS |
| D 241 | D3-03 DO YOU CLEAN FILTER CIRCUITS. | 22 | 12 | 27 | 18 | 26 | 23 | 33 | 13 | |
| D 242 | D3-04 DO YOU ALIGN OR ADJUST FILTER CIRCUITS. | 18 | 27 | 17 | 16 | 38 | 54 | 37 | 30 | |
| D 243 | D3-05 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT. | 37 | 23 | 39 | 42 | 46 | 38 | 45 | 52 | |
| D 244 | D3-06 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF FILTER CIRCUITS. | 21 | 4 | 20 | 34 | 31 | 31 | 29 | 35 | |
| D 245 | D3-07 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT. | 44 | 42 | 41 | 50 | 55 | 46 | 61 | 48 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| D 246 | D3-08 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF FILTER CIRCUITS. | 18 | 4 | 17 | 32 | 24 | 23 | 24 | 20 | |
| D 247 | D3-09 DO YOU WORK ON LOW PASS FILTERS. | 23 | 12 | 19 | 39 | 52 | 46 | 55 | 48 | |
| D 248 | D3-10 DO YOU WORK ON HIGH PASS FILTERS. | 22 | 12 | 19 | 37 | 53 | 54 | 55 | 48 | |
| D 249 | D3-11 DO YOU WORK ON BANDPASS FILTERS. | 25 | 19 | 22 | 37 | 68 | 54 | 71 | 70 | |
| D 251 | D3-13 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF FILTER | 20 | 12 | 17 | 34 | 44 | 38 | 45 | 43 | |
| D 250 | D3-12 DO YOU WORK ON BAND-REJECT FILTERS. | 23 | 31 | 27 | 11 | 16 | 15 | 18 | 13 | |
| D 252 | D3-14 DO YOU WORK WITH L-SECTION FILTER CONFIGURATIONS. | 18 | 8 | 14 | 34 | 25 | 31 | 22 | 30 | |
| D 253 | D3-15 DO YOU WORK WITH T-SECTION FILTER CONFIGURATIONS. | 16 | 4 | 12 | 32 | 23 | 38 | 20 | 22 | |
| D 254 | D3-16 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATIONS. | 16 | 4 | 10 | 37 | 24 | 38 | 18 | 30 | |
| D 255 | D3-17 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF FILTER CONFIGURATIONS. | 28 | 38 | 31 | 13 | 33 | 23 | 33 | 39 | |
| D 256 | D3-18 ARE PARALLEL RESONANT CIRCUITS USED IN FILTERS YOU WORK WITH. | 16 | 4 | 14 | 29 | 31 | 31 | 27 | 39 | |
| D 257 | D3-19 ARE SERIES-PARALLEL CIRCUITS USED IN FILTERS YOU WORK WITH. | 19 | 4 | 17 | 34 | 32 | 23 | 29 | 43 | |
| D 258 | D3-20 ARE SERIES RESONANT CIRCUITS USED IN FILTERS YOU WORK WITH. | 17 | 4 | 14 | 32 | 28 | 23 | 25 | 35 | |
| D 259 | D3-21 ARE DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT USED IN FILTERS YOU WORK WITH. | 31 | 42 | 31 | 21 | 28 | 15 | 31 | 26 | |
| D 260 | D3-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC | 0 | 0 | 0 | 0 | 5 | 15 | 2 | 4 | |
| E 261 | E1-01 DO YOU WORK WITH COUPLING DEVICES ON YOUR PRESENT JOB. | 33 | 31 | 28 | 45 | 61 | 69 | 61 | 57 | |
| E 262 | E1-02 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED | 27 | 23 | 22 | 39 | 46 | 31 | 45 | 57 | |
| E 263 | E1-03 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED | 24 | 23 | 18 | 39 | 38 | 23 | 39 | 43 | COUPLING |
| E 264 | E1-04 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED | 27 | 23 | 20 | 42 | 43 | 23 | 43 | 52 | |
| E 265 | E1-05 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE RC COUPLING FUNCTIONS. | 24 | 19 | 19 | 37 | 39 | 38 | 37 | 43 | |
| E 266 | E1-06 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE IMPEDANCE COUPLING FUNCTIONS. | 22 | 19 | 16 | 37 | 36 | 38 | 35 | 35 | |
| E 267 | E1-07 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE TRANSFORMER COUPLING FUNCTIONS. | 25 | 23 | 19 | 39 | 33 | 23 | 35 | 35 | |
| E 268 | E1-08 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS. | 24 | 23 | 18 | 37 | 39 | 46 | 33 | 46 | |
| E 269 | E1-09 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS. | 23 | 23 | 18 | 34 | 37 | 46 | 29 | 48 | |
| E 270 | E1-10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS. | 22 | 19 | 16 | 37 | 31 | 31 | 31 | 30 | |
| E 271 | E1-11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS. | 23 | 23 | 17 | 37 | 36 | 38 | 33 | 39 | |
| E 272 | E1-12 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUIT. | 12 | 15 | 12 | 11 | 23 | 31 | 29 | 17 | |

| | | | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| E | 273 | E2-01 ON YOUR PRESENT JOB DO YOU PERFORM SOLDERING TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS. | 86 | 85 | 84 | 89 | 80 | 100 | 82 | 65 | SOLDERING |
| E | 274 | E2-02 DO YOU SELECT TYPE OF SOLDER TO USE. | 64 | 58 | 65 | 66 | 60 | 54 | 67 | 48 | |
| E | 275 | E2-03 DO YOU ADD FLUX TO CONNECTIONS. | 72 | 58 | 78 | 68 | 78 | 85 | 82 | 65 | |
| E | 276 | E2-04 DO YOU CLEAN CONNECTIONS USING SOLVENTS. | 74 | 69 | 77 | 71 | 77 | 85 | 80 | 65 | |
| E | 277 | E2-05 DO YOU STRIP INSULATION FROM WIRES. | 85 | 85 | 88 | 79 | 82 | 100 | 84 | 65 | |
| E | 278 | E2-06 DO YOU CONNECT OR DISCONNECT HEAT SINKS. | 73 | 62 | 77 | 74 | 75 | 85 | 78 | 61 | |
| E | 279 | E2-07 DO YOU BEND OR SHAPE WIRES OR LEADS. | 83 | 85 | 84 | 79 | 78 | 85 | 82 | 65 | |
| E | 280 | E2-08 DO YOU CUT WIRES. | 85 | 85 | 88 | 79 | 80 | 92 | 84 | 65 | |
| E | 281 | E2-09 DO YOU FILE OR SHAPE SOLDERING IRON TIPS. | 65 | 46 | 69 | 68 | 62 | 62 | 65 | 57 | |
| E | 282 | E2-10 DO YOU TIN SOLDERING IRON TIPS. | 82 | 81 | 86 | 76 | 74 | 77 | 76 | 65 | |
| E | 283 | E2-11 DO YOU CLEAN SOLDERING IRON TIPS. | 83 | 81 | 87 | 76 | 78 | 85 | 82 | 65 | |
| E | 284 | E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS. | 74 | 69 | 78 | 68 | 78 | 92 | 78 | 70 | |
| E | 285 | E2-13 DO YOU TIN OR PRE-TIN CONDUCTORS. | 78 | 73 | 78 | 79 | 75 | 92 | 76 | 61 | |
| E | 286 | E2-14 DO YOU INSPECT SOLDERED CONNECTIONS. | 84 | 81 | 84 | 84 | 78 | 92 | 80 | 65 | |
| E | 287 | E2-15 DO YOU DESOLDER CONNECTIONS BY WICKING. | 67 | 62 | 71 | 61 | 74 | 92 | 75 | 61 | |
| E | 288 | E2-16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING TOOLS. | 60 | 35 | 67 | 61 | 68 | 62 | 73 | 61 | |
| E | 289 | E2-17 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS. | 54 | 31 | 60 | 58 | 59 | 62 | 65 | 43 | |
| E | 290 | E2-18 DO YOU CRUSH COMPONENTS FOR REMOVAL. | 23 | 12 | 28 | 21 | 18 | 15 | 24 | 9 | |
| E | 291 | E2-19 DO YOU MAKE HARDWIRE CONNECTIONS. | 80 | 69 | 86 | 74 | 77 | 85 | 82 | 61 | |
| E | 292 | E2-20 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS | 46 | 31 | 51 | 45 | 67 | 77 | 69 | 57 | |
| E | 293 | E2-21 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS | 51 | 38 | 57 | 47 | 63 | 77 | 63 | 57 | |
| E | 294 | E2-22 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS | 44 | 27 | 49 | 45 | 62 | 69 | 63 | 57 | |
| E | 295 | E3-01 DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB | 75 | 77 | 75 | 74 | 71 | 85 | 67 | 74 | RELAYS |
| E | 296 | E3-02 DO YOU ADJUST RELAYS | 8 | 15 | 8 | 3 | 16 | 31 | 16 | 9 | |
| E | 297 | E3-03 DO YOU CLEAN RELAYS | 27 | 23 | 31 | 21 | 37 | 31 | 41 | 30 | |
| E | 298 | E3-04 DO YOU INSPECT RELAYS | 53 | 54 | 53 | 53 | 59 | 54 | 59 | 61 | |
| E | 299 | E3-05 DO YOU REMOVE OR REPLACE COMPLETE RELAYS | 71 | 73 | 71 | 68 | 61 | 62 | 59 | 65 | |
| E | 300 | E3-06 DO YOU REMOVE OR REPLACE PARTS OR RELAYS | 5 | 8 | 5 | 3 | 8 | 23 | 6 | 4 | |
| E | 301 | E3-07 DO YOU TROUBLESHOOT RELAYS | 59 | 46 | 63 | 61 | 62 | 54 | 61 | 70 | |
| E | 302 | E3-08 DO YOU STRAIGHTEN RELAY CONTACTS | 27 | 23 | 29 | 24 | 21 | 31 | 16 | 26 | |
| E | 303 | E3-09 DO YOU PERFORM TASKS ON RELAY CONTACTS | 16 | 12 | 14 | 24 | 15 | 23 | 12 | 17 | |
| E | 304 | E3-10 DO YOU PERFORM TASKS ON RELAY CORES | 3 | 0 | 4 | 3 | 2 | 15 | 0 | 0 | |
| E | 305 | E3-11 DO YOU PERFORM TASKS ON RELAY COILS | 3 | 0 | 5 | 3 | 3 | 15 | 0 | 4 | |
| E | 306 | E3-12 DO YOU PERFORM TASKS ON RELAY ARMATURES | 3 | 4 | 4 | 3 | 2 | 8 | 0 | 4 | |
| E | 307 | E3-13 DO YOU PERFORM TASKS ON RELAY SPRINGS | 4 | 4 | 4 | 5 | 3 | 8 | 2 | 4 | |
| E | 308 | E3-14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPER (NO) SCHEMATIC SYMBOLS FOR RELAYS | 58 | 54 | 57 | 63 | 56 | 46 | 57 | 61 | |
| E | 309 | E3-15 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS | 56 | 54 | 55 | 61 | 55 | 46 | 57 | 57 | |
| E | 310 | E3-16 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS | 56 | 54 | 54 | 63 | 55 | 54 | 53 | 61 | |
| E | 311 | E3-17 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS | 56 | 54 | 53 | 63 | 55 | 46 | 53 | 65 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| F 312 | E3-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC SYMBOLS FOR RELAYS | 54 | 50 | 52 | 63 | 49 | 62 | 47 | 48 | |
| F 313 | E3-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE | 49 | 38 | 51 | 53 | 52 | 38 | 49 | 65 | |
| F 314 | F1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES | 1 | 0 | 1 | 3 | 3 | 0 | 4 | 4 | |
| F 315 | F1-02 DO YOU INSPECT MICROPHONES | 1 | 0 | 1 | 3 | 1 | 0 | 0 | 4 | |
| F 316 | F1-03 DO YOU CLEAN MICROPHONES | 1 | 0 | 1 | 3 | 1 | 0 | 0 | 4 | MICROPHONES |
| F 317 | F1-04 DO YOU OPERATE MICROPHONES | 1 | 0 | 0 | 3 | 2 | 0 | 2 | 4 | |
| F 318 | F1-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 4 | |
| F 319 | F1-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| F 320 | F1-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES | 1 | 0 | 1 | 3 | 1 | 0 | 0 | 4 | |
| F 321 | F1-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS | 1 | 0 | 0 | 3 | 1 | 8 | 0 | 0 | |
| F 322 | F1-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | |
| F 323 | F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | |
| F 324 | F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| F 325 | F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES | 1 | 0 | 1 | 0 | 2 | 8 | 0 | 4 | |
| F 326 | F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | |
| F 327 | F2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS | 0 | 0 | 0 | 0 | 7 | 15 | 2 | 13 | |
| F 328 | F2-02 DO YOU INSPECT SPEAKERS | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 9 | |
| F 329 | F2-03 DO YOU CLEAN SPEAKERS | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 9 | SPEAKERS |
| F 330 | F2-04 DO YOU OPERATE SPEAKERS | 0 | 0 | 0 | 0 | 7 | 15 | 2 | 13 | |
| F 331 | F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT | 0 | 0 | 0 | 0 | 3 | 8 | 2 | 4 | |
| F 332 | F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| F 333 | F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS | 0 | 0 | 0 | 0 | 2 | 8 | 2 | 0 | |
| F 334 | F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| F 335 | F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| F 336 | F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | |
| F 337 | F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| F 338 | F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | |
| F 339 | F2-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| F 340 | F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| F 341 | F2-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| F 342 | F3-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB | 93 | 88 | 96 | 87 | 95 | 85 | 100 | 91 | |
| F 343 | F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS | 86 | 77 | 89 | 87 | 91 | 77 | 94 | 91 | |
| F 344 | F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS | 78 | 69 | 82 | 76 | 89 | 85 | 92 | 83 | OSCILLOSCOPES |
| F 345 | F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS | 78 | 69 | 81 | 76 | 90 | 85 | 92 | 87 | |
| F 346 | F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY | 83 | 81 | 84 | 82 | 86 | 77 | 90 | 83 | |
| F 347 | F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME | 84 | 73 | 89 | 79 | 92 | 85 | 98 | 83 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| F 348 | F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS | 24 | 27 | 24 | 24 | 39 | 46 | 39 | 35 | |
| F 349 | F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES | 78 | 73 | 84 | 68 | 86 | 69 | 90 | 87 | |
| F 350 | F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS | 53 | 38 | 55 | 58 | 57 | 69 | 55 | 57 | |
| F 351 | F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE | 86 | 81 | 90 | 82 | 90 | 92 | 92 | 83 | |
| F 352 | F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS | 59 | 50 | 58 | 68 | 72 | 77 | 71 | 74 | |
| F 353 | F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE | 86 | 77 | 90 | 82 | 92 | 85 | 96 | 87 | |
| G 354 | G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB | 66 | 58 | 64 | 76 | 77 | 69 | 76 | 83 | |
| G 355 | G1-02 DO YOU INSPECT DIODES | 61 | 46 | 60 | 71 | 67 | 54 | 69 | 70 | SEMICONDUCTOR |
| G 356 | G1-03 DO YOU REMOVE OR REPLACE DIODES | 52 | 38 | 53 | 61 | 57 | 46 | 55 | 70 | DIODES |
| G 357 | G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT | 51 | 31 | 51 | 66 | 63 | 54 | 57 | 83 | |
| G 358 | G1-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES | 1 | 0 | 0 | 3 | 3 | 0 | 6 | 0 | |
| G 359 | G1-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, | 1 | 0 | 1 | 0 | 2 | 0 | 2 | 4 | |
| G 360 | G1-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES | 5 | 0 | 5 | 8 | 16 | 31 | 12 | 17 | |
| G 361 | G1-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES | 31 | 15 | 31 | 39 | 44 | 38 | 37 | 61 | |
| G 362 | G1-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON | 49 | 35 | 47 | 63 | 60 | 46 | 59 | 70 | |
| G 363 | G1-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW | 4 | 4 | 5 | 3 | 10 | 8 | 10 | 13 | |
| G 364 | G1-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE | 31 | 23 | 33 | 34 | 46 | 38 | 45 | 52 | |
| G 365 | G1-12 DO YOU USE OR REFER TO DIODE COLOR CODING | 17 | 15 | 14 | 24 | 23 | 15 | 16 | 43 | |
| G 366 | G1-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | |
| G 367 | G1-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | |
| G 368 | G1-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN 538 | 36 | 15 | 39 | 45 | 43 | 31 | 39 | 57 | |
| G 369 | G1-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT | 0 | 0 | 0 | 0 | 2 | 8 | 2 | 0 | |
| G 370 | G1-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | |
| G 371 | G1-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE | 32 | 23 | 33 | 37 | 41 | 31 | 41 | 48 | |
| G 372 | G1-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT | 1 | 4 | 0 | 0 | 1 | 0 | 2 | 0 | |
| G 373 | G1-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| DY-TSK | | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 |
|---|---|---|---|---|---|---|---|---|---|
| G 374 | GI-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G 375 | GI-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL) | 1 | 4 | 0 | 0 | 3 | 0 | 6 | 0 |
| G 376 | GI-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM) | 1 | 4 | 0 | 0 | 1 | 0 | 2 | 0 |
| G 377 | GI-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END | 47 | 31 | 49 | 53 | 60 | 46 | 53 | 83 |
| G 378 | GI-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON | 7 | 8 | 6 | 11 | 7 | 0 | 4 | 17 |
| G 379 | GI-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE | 15 | 4 | 16 | 21 | 32 | 46 | 24 | 43 |
| G 380 | GI-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT | 1 | 0 | 0 | 3 | 11 | 0 | 14 | 13 |
| G 381 | GI-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR | 31 | 23 | 30 | 37 | 49 | 46 | 47 | 57 |
| G 382 | GI-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS | 1 | 4 | 0 | 0 | 1 | 0 | 2 | 0 |
| G 383 | GI-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 0 |
| G 384 | GI-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G 385 | GI-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| G 386 | GI-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| G 387 | GI-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS | 5 | 4 | 5 | 5 | 8 | 0 | 8 | 13 |
| G 388 | GI-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| G 389 | GI-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| G 390 | GI-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL | 10 | 0 | 10 | 16 | 17 | 15 | 14 | 26 |
| G 391 | GI-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL | 10 | 0 | 11 | 16 | 17 | 15 | 14 | 26 |
| G 392 | GI-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS | 2 | 4 | 1 | 3 | 2 | 8 | 2 | 0 |
| G 393 | GI-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS | 2 | 4 | 1 | 3 | 2 | 8 | 2 | 0 |
| G 394 | GI-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G 395 | GI-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS | 4 | 4 | 5 | 3 | 2 | 0 | 2 | 4 |
| G 396 | GI-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL | 3 | 4 | 1 | 5 | 1 | 0 | 0 | 4 |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| G 397 | G1-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES | 31 | 27 | 27 | 45 | 57 | 38 | 56 | 74 | |
| G 398 | G1-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS | 0 | 0 | 0 | 0 | 2 | 0 | 4 | 0 | |
| G 399 | G1-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION | 18 | 4 | 16 | 32 | 22 | 23 | 20 | 26 | |
| G 400 | G1-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS | 4 | 4 | 2 | 8 | 13 | 8 | 10 | 22 | |
| G 401 | G1-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS | 3 | 4 | 2 | 5 | 9 | 8 | 8 | 13 | |
| G 402 | G1-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS | 4 | 4 | 2 | 8 | 15 | 8 | 10 | 30 | |
| G 403 | G1-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS | 7 | 8 | 5 | 11 | 17 | 8 | 14 | 30 | |
| G 404 | G2-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB. | 65 | 42 | 66 | 76 | 71 | 62 | 67 | 87 | |
| G 405 | G2-02 DO YOU INSPECT TRANSISTORS | 57 | 38 | 61 | 61 | 61 | 54 | 61 | 65 | |
| G 406 | G2-03 DO YOU REMOVE OR REPLACE TRANSISTORS | 52 | 31 | 57 | 55 | 54 | 62 | 47 | 65 | |
| G 407 | G2-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT | 50 | 23 | 53 | 63 | 57 | 54 | 55 | 65 | |
| G 408 | G2-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS | 40 | 19 | 41 | 53 | 56 | 69 | 53 | 57 | TRANSISTORS |
| G 409 | G2-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS | 41 | 19 | 41 | 58 | 53 | 62 | 53 | 48 | |
| G 410 | G2-07 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC) RESISTANCE MEASUREMENTS | 41 | 19 | 42 | 53 | 54 | 62 | 53 | 52 | |
| G 411 | G2-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION | 9 | 4 | 10 | 11 | 14 | 38 | 10 | 9 | |
| G 412 | G2-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION | 9 | 4 | 10 | 11 | 11 | 38 | 8 | 4 | |
| G 413 | G2-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER) | 17 | 4 | 16 | 29 | 21 | 38 | 16 | 22 | |
| G 414 | G2-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR | 7 | 4 | 6 | 13 | 11 | 38 | 10 | 0 | |
| G 415 | G2-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS | 58 | 38 | 60 | 66 | 71 | 69 | 69 | 78 | |
| G 416 | G2-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC | 56 | 38 | 61 | 63 | 69 | 69 | 67 | 74 | |
| G 417 | G2-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION | 20 | 4 | 23 | 26 | 33 | 46 | 31 | 30 | |
| G 418 | G2-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IB IS NORMALLY SIGNIFICANTLY | 11 | 4 | 11 | 16 | 28 | 38 | 25 | 26 | |
| G 419 | G2-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR | 20 | 12 | 22 | 21 | 36 | 46 | 31 | 39 | |
| G 420 | G2-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (ICBO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES | 10 | 4 | 7 | 18 | 16 | 38 | 10 | 17 | |
| G 421 | G2-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES | 3 | 4 | 2 | 5 | 7 | 0 | 8 | 9 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| G 422 | G2-19 | DO YOU USE OR REFER TO BETA TRANSISTOR GAINS | 5 | 4 | 2 | 11 | 8 | 8 | 10 | 4 | |
| G 423 | G2-20 | DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS | 5 | 4 | 2 | 11 | 8 | 8 | 10 | 4 | |
| G 424 | G2-21 | DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS | 4 | 4 | 2 | 8 | 7 | 8 | 8 | 4 | |
| G 425 | G2-22 | DO YOU CALCULATE BETA TRANSISTOR GAINS | 2 | 0 | 1 | 5 | 1 | 0 | 0 | 4 | |
| G 426 | G2-23 | DO YOU CALCULATE ALPHA TRANSISTOR GAINS | 2 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | |
| G 427 | G2-24 | DO YOU CALCULATE GAMMA TRANSISTOR GAINS | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | |
| G 428 | G3-01 | DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB | 49 | 38 | 45 | 66 | 63 | 62 | 59 | 74 | |
| G 429 | G3-02 | DO YOU INSPECT TRANSISTOR AMPLIFIERS | 41 | 38 | 36 | 53 | 51 | 46 | 47 | 61 | |
| G 430 | G3-03 | DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS | 31 | 23 | 28 | 42 | 56 | 54 | 49 | 74 | TRANSISTOR AMPLIFIERS |
| G 431 | G3-04 | DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL | 33 | 19 | 30 | 47 | 48 | 46 | 45 | 57 | |
| G 432 | G3-05 | DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS | 19 | 8 | 17 | 32 | 36 | 46 | 31 | 39 | |
| G 433 | G3-06 | DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER | 44 | 38 | 36 | 63 | 48 | 46 | 45 | 57 | |
| G 434 | G3-07 | DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS | 19 | 12 | 16 | 32 | 34 | 46 | 31 | 35 | |
| G 435 | G3-08 | DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE | 10 | 12 | 7 | 13 | 25 | 38 | 22 | 26 | |
| G 436 | G3-09 | DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN | 3 | 0 | 2 | 8 | 9 | 31 | 8 | 0 | |
| G 437 | G3-10 | DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE | 9 | 8 | 7 | 13 | 22 | 31 | 18 | 26 | |
| G 438 | G3-11 | DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN | 4 | 4 | 2 | 8 | 6 | 23 | 4 | 0 | |
| G 439 | G3-12 | DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL | 7 | 8 | 7 | 8 | 20 | 38 | 16 | 17 | |
| G 440 | G3-13 | DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN | 2 | 0 | 1 | 5 | 8 | 23 | 4 | 9 | |
| G 441 | G3-14 | DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A | 1 | 4 | 0 | 0 | 2 | 8 | 2 | 0 | |
| G 442 | G3-15 | DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR | 5 | 4 | 4 | 8 | 11 | 15 | 12 | 9 | |
| G 443 | G3-16 | DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR | 1 | 4 | 0 | 3 | 2 | 8 | 2 | 0 | |
| G 444 | G3-17 | DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION | 13 | 0 | 11 | 26 | 30 | 38 | 25 | 35 | |
| G 445 | G3-18 | DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION | 7 | 0 | 5 | 18 | 22 | 31 | 24 | 13 | |
| G 446 | G3-19 | DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION | 7 | 0 | 5 | 18 | 23 | 23 | 22 | 26 | |
| G 447 | G3-20 | DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE | 1 | 0 | 0 | 5 | 3 | 8 | 4 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 |
|---|---|---|---|---|---|---|---|---|---|
| G 448 | G3-21 DO YOU CALCULATE THE CURRENT GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE | 0 | 0 | 0 | 0 | 3 | 8 | 4 | 0 |
| G 449 | G3-22 DO YOU CALCULATE THE POWER GAIN FOR A SPECIFIC TRANSISTOR USING A FORMULA THAT IS, DO YOU MULTIPLY THE | 0 | 0 | 0 | 0 | 3 | 8 | 4 | 0 |
| G 450 | G3-23 DO YOU NEED TO KNOW THAT MORE COLLECTOR CURRENT IS GENERATED WITH LESS COLLECTOR VOLTAGE AS TEMPERATURE | 3 | 0 | 4 | 5 | 11 | 15 | 16 | 0 |
| G 451 | G3-24 DO YOU COMPUTE THE STATIC OPERATING POINT [Q] OF A TRANSISTOR AT DIFFERENT TEMPERATURES | 0 | 0 | 0 | 0 | 2 | 8 | 2 | 0 |
| G 452 | G3-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH | 13 | 8 | 10 | 24 | 24 | 31 | 22 | 26 |
| G 453 | G3-26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF- | 13 | 8 | 10 | 24 | 23 | 31 | 20 | 26 |
| G 454 | G3-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH | 14 | 4 | 11 | 26 | 23 | 31 | 22 | 22 |
| G 455 | G3-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH | 14 | 8 | 11 | 24 | 25 | 31 | 24 | 26 |
| G 456 | G3-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH | 14 | 8 | 11 | 24 | 24 | 31 | 24 | 22 |
| G 457 | G3-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH | 10 | 4 | 8 | 16 | 22 | 38 | 20 | 17 |
| G 458 | G3-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER (SWAMPING) RESISTOR STABILIZATION | 16 | 0 | 16 | 29 | 26 | 38 | 24 | 26 |
| G 459 | G3-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION | 16 | 0 | 16 | 29 | 26 | 38 | 22 | 30 |
| G 460 | G3-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION | 16 | 0 | 16 | 29 | 25 | 38 | 20 | 30 |
| G 461 | G3-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION | 18 | 0 | 19 | 29 | 26 | 38 | 25 | 22 |
| G 462 | G3-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION | 18 | 0 | 19 | 29 | 26 | 38 | 25 | 22 |
| G 463 | G3-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION | 13 | 0 | 13 | 21 | 23 | 38 | 22 | 17 |
| G 464 | G3-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS | 18 | 4 | 16 | 34 | 28 | 23 | 27 | 30 |
| G 465 | G3-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION | 13 | 0 | 12 | 24 | 24 | 31 | 24 | 22 |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | BY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| G | 466 | G3-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS | 17 | 4 | 17 | 26 | 26 | 36 | 24 | 26 | |
| G | 467 | G3-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS | 12 | 4 | 8 | 24 | 20 | 23 | 18 | 22 | |
| G | 468 | G3-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION | 8 | 0 | 6 | 18 | 14 | 23 | 12 | 13 | |
| G | 469 | G3-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION | 12 | 0 | 11 | 21 | 21 | 31 | 18 | 22 | |
| G | 470 | G3-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR | 4 | 0 | 2 | 11 | 11 | 15 | 12 | 9 | |
| G | 471 | G3-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS | 5 | 0 | 5 | 11 | 22 | 31 | 20 | 22 | |
| G | 472 | G3-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS | 11 | 8 | 5 | 26 | 11 | 15 | 10 | 13 | |
| G | 473 | G3-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS | 18 | 8 | 13 | 34 | 32 | 15 | 33 | 39 | |
| G | 474 | G3-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS | 12 | 8 | 10 | 18 | 18 | 15 | 20 | 17 | |
| G | 475 | G3-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS | 14 | 8 | 10 | 26 | 20 | 15 | 20 | 22 | |
| G | 476 | G3-49 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS | 16 | 8 | 12 | 32 | 29 | 23 | 27 | 35 | |
| H | 477 | H1-01 DO YOU USE OR REFER TO VARACTORS | 8 | 8 | 5 | 16 | 22 | 23 | 25 | 13 | SOLID-STATE SPECIAL PURPOSE DEVICES |
| H | 478 | H1-02 DO YOU USE OR REFER TO TUNNEL DIODES | 26 | 15 | 18 | 50 | 64 | 38 | 69 | 70 | |
| H | 479 | H1-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET) | 33 | 23 | 30 | 45 | 53 | 46 | 49 | 65 | |
| H | 480 | H1-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS | 33 | 27 | 27 | 50 | 52 | 38 | 51 | 61 | |
| H | 481 | H1-05 DO YOU USE OR REFER TO ZENER DIODES | 56 | 50 | 52 | 71 | 80 | 69 | 80 | 87 | |
| H | 482 | H1-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS | 73 | 58 | 70 | 89 | 94 | 92 | 96 | 91 | |
| H | 483 | H2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES | 78 | 81 | 78 | 76 | 87 | 85 | 88 | 87 | POWER SUPPLIES |
| H | 484 | H2-02 DO YOU INSPECT POWER SUPPLIES | 72 | 77 | 69 | 76 | 75 | 69 | 76 | 74 | |
| H | 485 | H2-03 DO YOU CLEAN POWER SUPPLIES | 50 | 23 | 55 | 55 | 52 | 15 | 59 | 57 | |
| H | 486 | H2-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES | 68 | 62 | 71 | 66 | 86 | 92 | 84 | 87 | |
| H | 487 | H2-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL | 57 | 46 | 60 | 58 | 77 | 77 | 78 | 74 | |
| H | 488 | H2-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS | 38 | 15 | 41 | 47 | 36 | 31 | 39 | 30 | |
| H | 489 | H2-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES | 74 | 77 | 70 | 82 | 83 | 85 | 82 | 83 | |
| H | 490 | H2-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS | 38 | 19 | 39 | 50 | 30 | 23 | 33 | 26 | |
| H | 491 | H2-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS | 42 | 35 | 42 | 47 | 49 | 31 | 49 | 61 | |
| H | 492 | H2-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS | 47 | 38 | 45 | 58 | 52 | 38 | 53 | 57 | |
| H | 493 | H2-11 DO YOU WORK WITH BRIDGE RECTIFIERS | 50 | 42 | 49 | 55 | 57 | 46 | 51 | 57 | |
| H | 494 | H2-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS | 34 | 23 | 34 | 42 | 44 | 23 | 51 | 39 | |
| H | 495 | H2-13 DO YOU USE OR REFER TO INPUT VOLTAGE | 59 | 58 | 59 | 61 | 64 | 77 | 59 | 70 | |
| H | 496 | H2-14 DO YOU USE OR REFER TO INPUT FREQUENCY | 44 | 46 | 42 | 45 | 52 | 69 | 45 | 57 | |
| H | 497 | H2-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE | 50 | 50 | 51 | 50 | 59 | 69 | 57 | 57 | |
| H | 498 | H2-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE | 50 | 50 | 48 | 53 | 54 | 54 | 55 | 52 | |
| H | 499 | H2-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE | 46 | 46 | 43 | 53 | 45 | 46 | 39 | 57 | |
| H | 500 | H2-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY | 30 | 27 | 27 | 39 | 37 | 31 | 35 | 43 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| M 501 | M2-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE | 17 | 12 | 14 | 26 | 23 | 31 | 25 | 13 | |
| M 502 | M2-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS | 52 | 54 | 52 | 50 | 61 | 77 | 61 | 52 | |
| M 503 | M2-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE | 48 | 46 | 45 | 55 | 51 | 54 | 47 | 57 | |
| M 504 | M2-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS | 40 | 27 | 39 | 53 | 51 | 46 | 55 | 43 | |
| M 505 | M2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS | 39 | 27 | 37 | 50 | 45 | 46 | 47 | 39 | |
| M 506 | M2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS | 33 | 15 | 29 | 53 | 47 | 54 | 47 | 43 | |
| M 507 | M2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS | 33 | 19 | 29 | 50 | 41 | 46 | 43 | 35 | |
| M 508 | M2-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS | 33 | 12 | 30 | 53 | 45 | 46 | 47 | 39 | |
| M 509 | M2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS | 33 | 15 | 30 | 50 | 44 | 46 | 45 | 39 | |
| M 510 | M2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY DON'T REMEMBER WHICH TYPE OF FILTER | 39 | 50 | 42 | 24 | 36 | 46 | 33 | 35 | |
| M 511 | M2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER | 1 | 0 | 2 | 0 | 2 | 0 | 2 | 4 | |
| M 512 | M3-01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB | 44 | 31 | 41 | 61 | 68 | 69 | 61 | 83 | |
| M 513 | M3-02 DO YOU INSPECT OSCILLATORS | 34 | 23 | 30 | 50 | 57 | 54 | 55 | 65 | |
| M 514 | M3-03 DO YOU ALIGN OR ADJUST OSCILLATORS | 33 | 27 | 25 | 55 | 56 | 62 | 51 | 65 | |
| M 515 | M3-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS | 35 | 27 | 31 | 50 | 59 | 62 | 55 | 65 | OSCILLATORS |
| M 516 | M3-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS | 10 | 0 | 10 | 18 | 18 | 23 | 20 | 13 | |
| M 517 | M3-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL | 30 | 12 | 28 | 47 | 56 | 54 | 55 | 61 | |
| M 518 | M3-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS | 10 | 0 | 7 | 24 | 22 | 23 | 24 | 17 | |
| M 519 | M3-08 DO YOU USE OR REFER TO FEEDBACK | 25 | 19 | 23 | 34 | 43 | 46 | 37 | 52 | |
| M 520 | M3-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD) | 21 | 19 | 16 | 34 | 40 | 38 | 35 | 52 | |
| M 521 | M3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY | 22 | 19 | 18 | 34 | 40 | 38 | 39 | 43 | |
| M 522 | M3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY | 27 | 23 | 23 | 39 | 46 | 46 | 41 | 57 | |
| M 523 | M3-12 DO YOU USE OR REFER TO DAMPING | 17 | 12 | 12 | 32 | 23 | 31 | 20 | 26 | |
| M 524 | M3-13 DO YOU USE OR REFER TO REGENERATIVE FEEDBACK | 19 | 15 | 16 | 29 | 32 | 31 | 25 | 48 | |
| M 525 | M3-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT | 7 | 8 | 6 | 11 | 8 | 15 | 8 | 4 | |
| M 526 | M3-15 DO YOU USE OR REFER TO CRITICAL DAMPING | 6 | 4 | 4 | 13 | 10 | 15 | 10 | 9 | |
| M 527 | M3-16 DO YOU USE OR REFER TO UNDER DAMPING | 7 | 4 | 2 | 18 | 13 | 15 | 10 | 17 | |
| M 528 | M3-17 DO YOU USE OR REFER TO OVER DAMPING | 7 | 4 | 4 | 18 | 14 | 15 | 10 | 22 | |
| M 529 | M3-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK CIRCUITS AS FDD | 20 | 12 | 20 | 26 | 32 | 31 | 31 | 35 | |
| M 530 | M3-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS FDD | 20 | 8 | 19 | 29 | 39 | 38 | 37 | 43 | |
| M 531 | M3-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS FDD | 23 | 19 | 22 | 29 | 36 | 23 | 31 | 52 | |
| M 532 | M3-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD | 18 | 23 | 14 | 21 | 20 | 31 | 22 | 9 | |
| M 533 | M3-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS | 10 | 4 | 8 | 18 | 20 | 38 | 16 | 17 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| M 534 | M3-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS | 12 | 4 | 8 | 24 | 22 | 38 | 18 | 22 | |
| M 535 | M3-24 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS | 12 | 4 | 11 | 21 | 21 | 31 | 18 | 22 | |
| M 536 | M3-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS | 6 | 4 | 5 | 11 | 10 | 15 | 8 | 13 | |
| M 537 | M3-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS | 4 | 4 | 4 | 5 | 9 | 23 | 8 | 4 | |
| M 538 | M3-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF OSCILLATORS | 27 | 27 | 28 | 26 | 26 | 23 | 29 | 22 | |
| I 539 | I1-01 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB | 30 | 27 | 24 | 45 | 53 | 69 | 43 | 65 | |
| I 540 | I1-02 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS | 24 | 23 | 17 | 39 | 40 | 46 | 41 | 35 | |
| I 541 | I1-03 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS | 18 | 15 | 12 | 34 | 48 | 62 | 43 | 52 | |
| I 542 | I1-04 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS | 13 | 12 | 8 | 24 | 36 | 15 | 35 | 48 | MULTIVIBRATORS |
| I 543 | I1-05 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS | 16 | 4 | 12 | 34 | 44 | 54 | 41 | 43 | |
| I 544 | I1-06 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS | 8 | 0 | 7 | 16 | 24 | 38 | 24 | 17 | |
| I 545 | I1-07 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS | 23 | 23 | 17 | 37 | 43 | 62 | 39 | 39 | |
| I 546 | I1-08 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING COMPONENTS | 7 | 0 | 6 | 13 | 18 | 23 | 18 | 17 | |
| I 547 | I1-09 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUITS | 16 | 12 | 13 | 26 | 22 | 15 | 24 | 22 | |
| I 548 | I1-10 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC NETWORKS | 17 | 15 | 13 | 26 | 31 | 31 | 29 | 35 | |
| I 549 | I1-11 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN CRYSTALS | 15 | 12 | 12 | 24 | 23 | 31 | 20 | 26 | |
| I 550 | I1-12 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T REMEMBER WHICH TYPE OF FDD | 14 | 15 | 13 | 13 | 21 | 38 | 14 | 26 | |
| I 551 | I1-13 DO YOU WORK WITH ASTABLE MULTIVIBRATORS | 19 | 19 | 14 | 29 | 34 | 31 | 29 | 48 | |
| I 552 | I1-14 DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS | 19 | 19 | 14 | 29 | 36 | 31 | 29 | 52 | |
| I 553 | I1-15 DO YOU WORK WITH BISTABLE MULTIVIBRATORS | 18 | 19 | 13 | 29 | 39 | 38 | 29 | 61 | |
| I 554 | I1-16 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE MULTIVIBRATORS | 10 | 4 | 13 | 5 | 18 | 46 | 14 | 13 | |
| I 555 | I2-01 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB | 24 | 15 | 19 | 42 | 37 | 54 | 24 | 57 | |
| I 556 | I2-02 DO YOU WORK WITH SERIES DIODE LIMITERS | 14 | 8 | 10 | 29 | 25 | 23 | 20 | 39 | |
| I 557 | I2-03 DO YOU WORK WITH SHUNT DIODE LIMITERS | 13 | 8 | 10 | 24 | 21 | 23 | 14 | 35 | LIMITERS AND CLAMPERS |
| I 558 | I2-04 DO YOU WORK WITH LIMITERS WITH BIAS | 13 | 8 | 10 | 24 | 16 | 23 | 12 | 22 | |
| I 559 | I2-05 DO YOU WORK WITH ZENER DIODE LIMITERS | 16 | 8 | 13 | 26 | 26 | 23 | 20 | 43 | |
| I 560 | I2-06 DO YOU WORK WITH TRANSISTOR LIMITERS | 14 | 8 | 11 | 24 | 24 | 23 | 18 | 39 | |
| I 561 | I2-07 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS | 10 | 8 | 10 | 13 | 17 | 38 | 10 | 22 | |
| I 562 | I2-08 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS | 13 | 8 | 10 | 24 | 17 | 0 | 16 | 30 | |
| I 563 | I2-09 DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS | 11 | 8 | 7 | 21 | 13 | 0 | 10 | 26 | |
| I 564 | I2-10 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING CIRCUIT | 11 | 8 | 10 | 16 | 22 | 38 | 12 | 35 | |
| I 565 | I3-01 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS ELECTRON TUBES | 14 | 12 | 13 | 18 | 28 | 38 | 24 | 30 | |
| I 566 | I3-02 DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD | 12 | 8 | 11 | 18 | 18 | 23 | 20 | 13 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| 567 | 13-03 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES | 3 | 4 | 1 | 8 | 2 | 0 | 2 | 4 | |
| 568 | 13-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES | 7 | 4 | 7 | 11 | 15 | 15 | 12 | 22 | |
| 569 | 13-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES | 7 | 8 | 6 | 11 | 13 | 15 | 12 | 13 | |
| 570 | 13-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES | 11 | 8 | 7 | 21 | 20 | 38 | 14 | 22 | ELECTRON TUBES |
| 571 | 13-07 DO YOU USE OR REFER TO CUTOFF | 4 | 12 | 2 | 3 | 6 | 8 | 2 | 13 | |
| 572 | 13-08 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING | 2 | 8 | 1 | 0 | 2 | 8 | 0 | 4 | |
| 573 | 13-09 DO YOU USE OR REFER TO PEAK CURRENT RATING | 1 | 8 | 0 | 0 | 3 | 8 | 2 | 4 | |
| 574 | 13-10 DO YOU USE OR REFER TO TRANSIT TIME | 2 | 8 | 1 | 0 | 2 | 0 | 2 | 4 | |
| 575 | 13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING | 1 | 8 | 0 | 0 | 1 | 0 | 2 | 0 | |
| 576 | 13-12 DO YOU USE OR REFER TO SATURATION | 3 | 8 | 1 | 3 | 8 | 15 | 4 | 13 | |
| 577 | 13-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE | 3 | 8 | 1 | 3 | 3 | 8 | 2 | 4 | |
| 578 | 13-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE RESISTANCE FOR ELECTRON TUBES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 579 | 13-15 DO YOU USE OR REFER TO PLATE VOLTAGE | 6 | 4 | 5 | 11 | 20 | 23 | 18 | 22 | |
| 580 | 13-16 DO YOU USE OR REFER TO PLATE CURRENT | 3 | 4 | 2 | 3 | 16 | 23 | 12 | 22 | |
| 581 | 13-17 DO YOU USE OR REFER TO GRID VOLTAGE | 5 | 4 | 4 | 11 | 21 | 31 | 18 | 22 | |
| 582 | 13-18 DO YOU USE OR REFER TO GRID CURRENT | 2 | 4 | 1 | 3 | 17 | 31 | 12 | 22 | |
| 583 | 13-19 DO YOU USE OR REFER TO CATHODE VOLTAGE | 7 | 8 | 5 | 11 | 20 | 31 | 16 | 22 | |
| 584 | 13-20 DO YOU USE OR REFER TO CATHODE CURRENT | 3 | 8 | 2 | 3 | 17 | 31 | 12 | 22 | |
| 585 | 13-21 DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS | 3 | 4 | 2 | 3 | 3 | 0 | 4 | 4 | |
| 586 | 13-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE AMPLIFICATION FACTORS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 587 | 13-23 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC) AMPLIFICATION FACTORS | 1 | 4 | 0 | 0 | 2 | 0 | 2 | 4 | |
| 588 | 13-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSCONDUCTANCE (G, WHICH IS MEASURED IN MHOS) | 1 | 4 | 0 | 0 | 1 | 0 | 2 | 0 | |
| 589 | 13-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE TRANSCONDUCTANCES | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 590 | 13-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE | 1 | 4 | 0 | 0 | 1 | 8 | 0 | 0 | |
| 591 | 13-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE RESISTANCE | 1 | 4 | 0 | 0 | 1 | 8 | 0 | 0 | |
| 592 | 13-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE | 2 | 4 | 1 | 3 | 5 | 8 | 2 | 9 | |
| 593 | 13-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES | 0 | 0 | 0 | 0 | 2 | 8 | 0 | 4 | |
| 594 | 13-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE VOLTAGE FOR A SPECIFIED BIAS | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 4 | |
| 595 | 13-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS | 1 | 0 | 1 | 0 | 2 | 8 | 0 | 4 | |
| 596 | 13-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF | 0 | 0 | 0 | 0 | 3 | 8 | 0 | 9 | |
| 597 | 13-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION | 0 | 0 | 0 | 0 | 2 | 8 | 0 | 4 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| I | 598 | I3-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN | 3 | 4 | 4 | 3 | 9 | 15 | 8 | 9 | |
| I | 599 | I3-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY | 1 | 4 | 0 | 0 | 6 | 15 | 4 | 4 | |
| I | 600 | I3-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN | 1 | 4 | 0 | 3 | 2 | 0 | 2 | 4 | |
| I | 601 | I3-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN | 4 | 4 | 2 | 8 | 8 | 15 | 6 | 9 | |
| I | 602 | I3-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN | 5 | 0 | 5 | 8 | 13 | 15 | 10 | 17 | |
| I | 603 | I3-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 4 | |
| I | 604 | I3-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| I | 605 | I3-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION | 8 | 0 | 7 | 16 | 14 | 0 | 14 | 22 | |
| I | 606 | I3-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS | 11 | 4 | 11 | 16 | 16 | 15 | 16 | 17 | |
| I | 607 | I3-43 DO YOU USE OR REFER TO THE TYPE OF MATERIAL OR THE OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE | 0 | 0 | 0 | 0 | 2 | 8 | 2 | 0 | |
| I | 608 | I3-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS | 3 | 0 | 1 | 8 | 7 | 8 | 6 | 9 | |
| J | 609 | J1-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB | 10 | 4 | 11 | 13 | 10 | 23 | 8 | 9 | |
| J | 610 | J1-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER | 0 | 0 | 0 | 0 | 3 | 8 | 2 | 4 | ELECTRON TUBE AMPLIFIERS AND CIRCUITS |
| J | 611 | J1-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS | 1 | 0 | 0 | 3 | 2 | 8 | 0 | 4 | |
| J | 612 | J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS | 1 | 0 | 0 | 3 | 3 | 0 | 4 | 4 | |
| J | 613 | J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS | 1 | 0 | 0 | 3 | 3 | 8 | 2 | 4 | |
| J | 614 | J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS | 1 | 0 | 0 | 3 | 5 | 8 | 4 | 4 | |
| J | 615 | J1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER | 5 | 0 | 6 | 8 | 6 | 23 | 2 | 4 | |
| J | 616 | J2-01 DO YOU WORK WITH GAS TUBES (HOT CATHODE OR COLD CATHODE) | 6 | 4 | 5 | 11 | 5 | 8 | 4 | 4 | |
| J | 617 | J2-02 DO YOU WORK WITH CATHODE-RAY TUBES | 29 | 23 | 29 | 34 | 33 | 54 | 29 | 30 | SPECIAL PURPOSE ELECTRON TUBES |
| J | 618 | J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES | 1 | 0 | 1 | 0 | 9 | 23 | 8 | 4 | |
| J | 619 | J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED | 3 | 0 | 5 | 3 | 10 | 15 | 10 | 9 | |
| J | 620 | J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYRATRONS | 2 | 0 | 2 | 3 | 1 | 0 | 0 | 4 | |
| J | 621 | J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATRONS ARE USED | 3 | 0 | 2 | 5 | 2 | 8 | 0 | 4 | |
| J | 622 | J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT) | 16 | 4 | 14 | 26 | 24 | 62 | 16 | 22 | |
| J | 623 | J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES | 14 | 4 | 14 | 18 | 18 | 38 | 12 | 22 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| J | 624 | J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES | 10 | 0 | 10 | 18 | 13 | 15 | 10 | 17 | |
| J | 625 | J2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS | 20 | 8 | 22 | 24 | 22 | 54 | 16 | 17 | |
| J | 626 | J2-11 DO YOU USE OR REFER TO AQUADAG COATINGS | 13 | 8 | 11 | 21 | 13 | 38 | 8 | 9 | |
| J | 627 | J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS | 10 | 8 | 10 | 11 | 13 | 31 | 8 | 13 | |
| J | 628 | J2-13 DO YOU USE OR REFER TO PERSISTENCE | 14 | 8 | 13 | 21 | 14 | 15 | 14 | 13 | |
| J | 629 | J2-14 DO YOU USE OR REFER TO DECAY TIMES | 12 | 8 | 12 | 16 | 18 | 46 | 16 | 9 | |
| J | 630 | J2-15 DO YOU USE OR REFER TO FLUORESCENCE | 10 | 8 | 11 | 11 | 14 | 23 | 12 | 13 | |
| J | 631 | J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE | 12 | 8 | 12 | 13 | 11 | 23 | 12 | 4 | |
| J | 632 | J3-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB | 49 | 54 | 43 | 58 | 78 | 77 | 76 | 83 | |
| J | 633 | J3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS | 27 | 23 | 23 | 39 | 45 | 38 | 53 | 30 | HETERODYNING, MODULATION, AND DEMODULATION |
| J | 634 | J3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS | 31 | 27 | 28 | 42 | 49 | 46 | 51 | 48 | |
| J | 635 | J3-04 DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS | 19 | 15 | 16 | 29 | 38 | 46 | 41 | 26 | |
| J | 636 | J3-05 DO YOU PERFORM TASKS ON REACTANCE MODULATORS | 18 | 12 | 17 | 26 | 14 | 15 | 18 | 4 | |
| J | 637 | J3-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS | 27 | 31 | 22 | 34 | 38 | 54 | 35 | 35 | |
| K | 638 | K1-01 DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB | 12 | 12 | 11 | 16 | 28 | 23 | 25 | 35 | |
| K | 639 | K1-02 DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS | 12 | 12 | 10 | 16 | 26 | 23 | 25 | 30 | |
| K | 640 | K1-03 DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS | 8 | 4 | 6 | 16 | 23 | 23 | 20 | 30 | AM SYSTEMS |
| K | 641 | K1-04 DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS | 10 | 12 | 7 | 13 | 29 | 23 | 27 | 35 | |
| K | 642 | K1-05 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS | 9 | 12 | 6 | 13 | 25 | 23 | 24 | 30 | |
| K | 643 | K1-06 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS | 7 | 12 | 4 | 11 | 21 | 15 | 20 | 26 | |
| K | 644 | K1-07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS | 9 | 12 | 7 | 11 | 24 | 15 | 24 | 30 | |
| K | 645 | K1-08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS | 7 | 8 | 5 | 11 | 22 | 15 | 22 | 26 | |
| K | 646 | K1-09 DO YOU PERFORM TASKS ON RF OSCILLATORS | 8 | 8 | 7 | 11 | 21 | 15 | 20 | 26 | |
| K | 647 | K1-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS | 6 | 4 | 5 | 11 | 23 | 23 | 20 | 30 | |
| K | 648 | K1-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS | 5 | 0 | 4 | 13 | 11 | 15 | 10 | 13 | |
| K | 649 | K1-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS | 5 | 4 | 4 | 11 | 24 | 23 | 22 | 30 | |
| K | 650 | K1-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS | 8 | 8 | 7 | 11 | 18 | 15 | 20 | 17 | |
| K | 651 | K1-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS | 7 | 4 | 7 | 11 | 20 | 15 | 20 | 22 | |
| K | 652 | K1-15 DO YOU PERFORM TASKS ON DETECTORS | 8 | 8 | 7 | 11 | 25 | 31 | 20 | 35 | |
| K | 653 | K1-16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE | 2 | 4 | 1 | 3 | 10 | 8 | 10 | 13 | |
| K | 654 | K1-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS | 4 | 4 | 1 | 11 | 15 | 23 | 12 | 17 | |
| K | 655 | K1-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS | 6 | 8 | 2 | 13 | 20 | 23 | 16 | 26 | |
| K | 656 | K1-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS | 9 | 8 | 7 | 13 | 25 | 31 | 22 | 30 | |
| K | 657 | K1-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS | 9 | 8 | 7 | 13 | 18 | 23 | 14 | 26 | |
| K | 658 | K1-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION | 4 | 0 | 2 | 11 | 6 | 8 | 4 | 9 | |
| K | 659 | K1-22 DO YOU USE OR REFER TO BANDPASS DISTORTION | 3 | 0 | 2 | 8 | 9 | 15 | 10 | 4 | |
| K | 660 | K1-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| K 661 | K1-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE | 2 | 0 | 0 | 8 | 9 | 8 | 6 | 17 | |
| K 662 | K1-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS | 2 | 0 | 1 | 5 | 5 | 0 | 4 | 9 | |
| K 663 | K1-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR IMAGE REJECTION RATIOS | 2 | 0 | 1 | 5 | 7 | 0 | 6 | 13 | |
| K 664 | K1-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM TRANSMITTER SCHEMATIC DIAGRAMS | 7 | 12 | 6 | 8 | 24 | 15 | 24 | 30 | |
| K 665 | K1-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM RECEIVER SCHEMATIC DIAGRAMS | 7 | 8 | 6 | 11 | 24 | 15 | 22 | 35 | |
| K 666 | K2-01 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB | 16 | 15 | 16 | 18 | 28 | 38 | 24 | 30 | |
| K 667 | K2-02 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS | 17 | 15 | 14 | 24 | 24 | 31 | 20 | 30 | |
| K 668 | K2-03 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS | 11 | 12 | 8 | 16 | 21 | 31 | 12 | 35 | FM SYSTEMS |
| K 669 | K2-04 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS | 15 | 15 | 11 | 24 | 26 | 38 | 20 | 35 | |
| K 670 | K2-05 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS | 12 | 15 | 10 | 13 | 26 | 38 | 20 | 35 | |
| K 671 | K2-06 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS | 11 | 12 | 6 | 21 | 21 | 31 | 16 | 26 | |
| K 672 | K2-07 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS | 11 | 15 | 10 | 11 | 24 | 38 | 18 | 30 | |
| K 673 | K2-08 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS | 10 | 15 | 6 | 16 | 18 | 38 | 14 | 17 | |
| K 674 | K2-09 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS | 7 | 8 | 4 | 16 | 10 | 31 | 4 | 13 | |
| K 675 | K2-10 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS | 7 | 12 | 5 | 11 | 18 | 31 | 12 | 26 | |
| K 676 | K2-11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS) | 9 | 15 | 6 | 11 | 21 | 31 | 14 | 30 | |
| K 677 | K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS | 10 | 15 | 7 | 13 | 24 | 38 | 18 | 30 | |
| K 678 | K2-13 DO YOU PERFORM TASKS ON RF AMPLIFIERS | 11 | 15 | 8 | 13 | 23 | 38 | 16 | 30 | |
| K 679 | K2-14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS | 7 | 15 | 4 | 11 | 21 | 38 | 14 | 26 | |
| K 680 | K2-15 DO YOU PERFORM TASKS ON IF AMPLIFIERS | 12 | 15 | 10 | 16 | 18 | 31 | 14 | 22 | |
| K 681 | K2-16 DO YOU PERFORM TASKS ON LIMITERS | 7 | 12 | 4 | 11 | 17 | 31 | 12 | 22 | |
| K 682 | K2-17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS | 7 | 12 | 5 | 11 | 18 | 38 | 12 | 22 | |
| K 683 | K2-18 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS | 12 | 15 | 8 | 18 | 24 | 31 | 18 | 35 | |
| K 684 | K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS | 11 | 12 | 8 | 16 | 23 | 31 | 16 | 35 | |
| K 685 | K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS | 22 | 15 | 23 | 26 | 8 | 15 | 4 | 13 | |
| K 686 | K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS | 25 | 15 | 27 | 29 | 29 | 23 | 31 | 26 | NUMBERING SYSTEMS |
| K 687 | K3-03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS | 20 | 15 | 20 | 21 | 6 | 15 | 4 | 4 | |
| K 688 | K3-04 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS | 21 | 15 | 20 | 26 | 6 | 15 | 4 | 4 | |
| K 689 | K3-05 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS | 24 | 15 | 28 | 24 | 28 | 15 | 33 | 22 | |
| K 690 | K3-06 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS | 22 | 15 | 22 | 26 | 5 | 8 | 4 | 4 | |
| K 691 | K3-07 DO YOU ADD BINARY NUMBERS TO GET A SUM | 19 | 8 | 20 | 24 | 20 | 15 | 24 | 13 | |
| K 692 | K3-08 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD | 11 | 0 | 12 | 16 | 9 | 8 | 12 | 4 | |
| K 693 | K3-09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD | 14 | 4 | 14 | 18 | 13 | 8 | 18 | 4 | |

AD-A040 750 AIR FORCE OCCUPATIONAL MEASUREMENT CENTER LACKLAND A--ETC F/G 5/9
ELECTRONICS PRINCIPLES OCCUPATIONAL SURVEY REPORT, INTEGRATED A--ETC(U)
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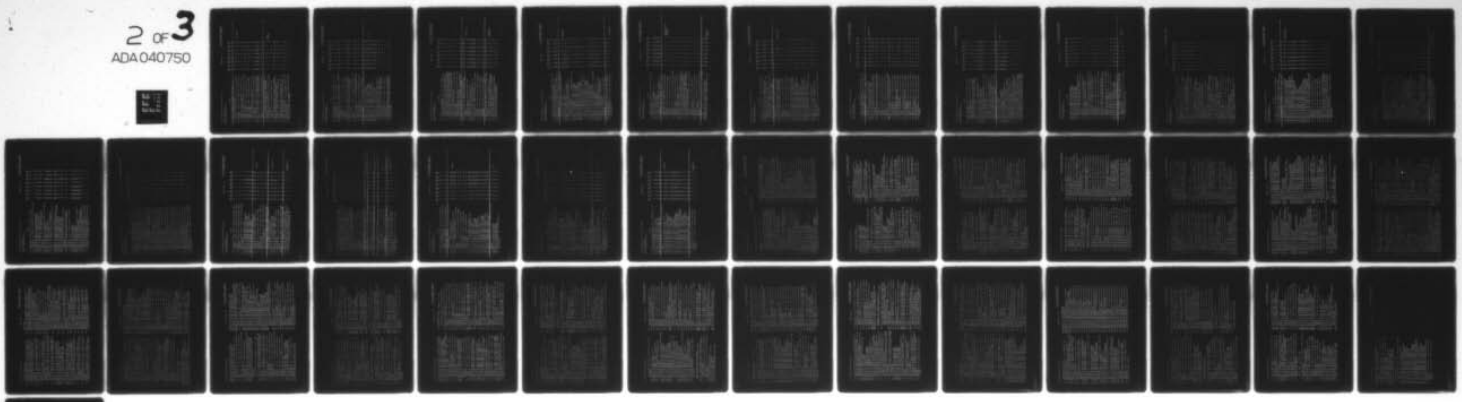

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | BY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| x 694 | x3-10 | DO YOU ADD OCTAL NUMBERS TO GET A SUM | 11 | 8 | 10 | 16 | 3 | 8 | 4 | 0 | |
| L 695 | L1-01 | IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS | 28 | 19 | 29 | 32 | 71 | 62 | 67 | 87 | |
| L 696 | L1-02 | DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES | 10 | 4 | 12 | 11 | 29 | 8 | 33 | 30 | LOGIC FUNCTIONS |
| L 697 | L1-03 | DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES | 10 | 4 | 12 | 11 | 29 | 8 | 33 | 30 | |
| L 698 | L1-04 | DO YOU CONSTRUCT TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS | 10 | 4 | 12 | 11 | 29 | 8 | 33 | 30 | |
| L 699 | L1-05 | DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES | 10 | 4 | 11 | 11 | 29 | 8 | 33 | 30 | |
| L 700 | L1-06 | DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES | 16 | 8 | 19 | 16 | 51 | 46 | 51 | 52 | |
| L 701 | K1-07 | DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES | 16 | 8 | 19 | 13 | 52 | 54 | 51 | 52 | |
| L 702 | K1-08 | DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS | 15 | 4 | 18 | 16 | 52 | 54 | 51 | 52 | |
| L 703 | L1-09 | DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS | 15 | 8 | 18 | 13 | 52 | 54 | 51 | 52 | |
| L 704 | L1-10 | DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES | 25 | 15 | 28 | 26 | 66 | 62 | 63 | 74 | |
| L 705 | L1-11 | DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES | 25 | 15 | 28 | 26 | 66 | 62 | 63 | 74 | |
| L 706 | L1-12 | DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES | 25 | 15 | 28 | 26 | 64 | 62 | 63 | 70 | |
| L 707 | L1-13 | DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES | 24 | 15 | 27 | 26 | 63 | 62 | 61 | 70 | |
| L 708 | L2-01 | IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC | 7 | 4 | 7 | 11 | 18 | 0 | 20 | 26 | |
| L 709 | L2-02 | DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS | 3 | 0 | 2 | 8 | 10 | 0 | 14 | 9 | BOOLEAN EQUATIONS |
| L 710 | L2-03 | DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS | 2 | 0 | 1 | 5 | 6 | 8 | 6 | 4 | |
| L 711 | L2-04 | DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS | 3 | 8 | 1 | 5 | 10 | 15 | 12 | 4 | |
| L 712 | L2-05 | DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES | 14 | 8 | 13 | 18 | 34 | 15 | 37 | 39 | |
| L 713 | L2-06 | DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS | 6 | 8 | 2 | 13 | 13 | 8 | 14 | 13 | |
| L 714 | L2-07 | DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA | 8 | 8 | 5 | 16 | 20 | 31 | 14 | 26 | |
| L 715 | L2-08 | DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES | 12 | 4 | 8 | 24 | 18 | 15 | 20 | 17 | |
| L 716 | L2-09 | DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS | 5 | 4 | 4 | 11 | 11 | 15 | 12 | 9 | |
| L 717 | L2-10 | DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE | 17 | 12 | 12 | 32 | 40 | 31 | 41 | 43 | |
| L 718 | L2-11 | DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS | 3 | 4 | 1 | 5 | 10 | 8 | 8 | 17 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| L 719 | L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS | 6 | 8 | 2 | 13 | 18 | 15 | 22 | 13 | |
| L 720 | L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS | 14 | 12 | 12 | 21 | 36 | 38 | 33 | 39 | |
| L 721 | L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS | 17 | 19 | 13 | 24 | 41 | 38 | 41 | 43 | |
| L 722 | L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS | 15 | 12 | 13 | 21 | 39 | 38 | 37 | 43 | |
| L 723 | L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS | 16 | 15 | 13 | 24 | 38 | 31 | 35 | 48 | |
| L 724 | L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS | 14 | 8 | 13 | 21 | 38 | 38 | 35 | 43 | |
| L 725 | L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS | 16 | 8 | 16 | 24 | 37 | 38 | 33 | 43 | |
| L 726 | L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES | 11 | 8 | 10 | 16 | 23 | 38 | 20 | 22 | |
| L 727 | L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS | 11 | 8 | 10 | 16 | 23 | 38 | 18 | 26 | |
| L 728 | L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS | 10 | 8 | 8 | 16 | 24 | 38 | 18 | 30 | |
| L 729 | L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS | 17 | 15 | 13 | 26 | 40 | 38 | 37 | 48 | |
| L 730 | L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS | 12 | 12 | 10 | 16 | 29 | 38 | 27 | 26 | |
| L 731 | L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS | 10 | 12 | 7 | 16 | 29 | 38 | 25 | 30 | |
| L 732 | L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS | 3 | 4 | 2 | 3 | 11 | 15 | 12 | 9 | |
| L 733 | L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB | 29 | 19 | 31 | 32 | 54 | 54 | 53 | 57 | |
| L 734 | L3-02 DO YOU USE OR REFER TO UP-COUNTERS | 24 | 15 | 27 | 24 | 46 | 38 | 43 | 57 | |
| L 735 | L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS | 21 | 15 | 23 | 21 | 43 | 23 | 43 | 52 | |
| L 736 | L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS | 20 | 15 | 19 | 24 | 22 | 23 | 18 | 30 | |
| L 737 | L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS | 20 | 15 | 19 | 24 | 20 | 15 | 16 | 30 | COUNTERS |
| L 738 | L3-06 DO YOU USE OR REFER TO RING COUNTERS | 8 | 8 | 10 | 5 | 10 | 15 | 10 | 9 | |
| L 739 | L3-07 DO YOU USE OR REFER TO DECADE COUNTERS | 14 | 12 | 16 | 11 | 33 | 23 | 33 | 39 | |
| L 740 | L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS | 18 | 15 | 19 | 18 | 26 | 31 | 22 | 35 | |
| L 741 | L3-09 DO YOU USE OR REFER TO DOWN CLOCKS | 18 | 15 | 20 | 16 | 32 | 15 | 31 | 43 | |
| L 742 | L3-10 DO YOU USE OR REFER TO UP CLOCKS | 19 | 15 | 20 | 18 | 36 | 38 | 33 | 39 | |
| L 743 | L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS | 9 | 4 | 10 | 11 | 29 | 23 | 33 | 22 | |
| L 744 | L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP- | 7 | 4 | 7 | 8 | 22 | 23 | 22 | 22 | |
| L 745 | L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS | 8 | 4 | 8 | 11 | 28 | 15 | 27 | 35 | |
| L 746 | L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS | 4 | 0 | 6 | 3 | 8 | 15 | 8 | 4 | |
| L 747 | L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER | 9 | 4 | 8 | 13 | 1[illegible] | 15 | 20 | 17 | |
| L 748 | L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS | 12 | 8 | 10 | 18 | 25 | 15 | 22 | 39 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| L | 749 L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS | 9 | 0 | 10 | 13 | 21 | 8 | 22 | 26 | |
| L | 750 L3-18 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS | 6 | 4 | 8 | 3 | 16 | 23 | 14 | 17 | |
| L | 751 L3-19 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENT- | 5 | 4 | 6 | 3 | 16 | 31 | 10 | 22 | |
| L | 752 L3-20 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE | 5 | 4 | 6 | 3 | 10 | 15 | 8 | 13 | |
| L | 753 L3-21 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS | 5 | 0 | 7 | 3 | 14 | 8 | 12 | 22 | |
| L | 754 L3-22 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS | 2 | 4 | 2 | 0 | 3 | 0 | 6 | 0 | |
| L | 755 L3-23 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES | 2 | 0 | 4 | 0 | 8 | 8 | 8 | 9 | |
| L | 756 L3-24 DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT | 5 | 4 | 6 | 5 | 14 | 8 | 14 | 17 | |
| M | 757 M1-01 DO YOU WORK WITH SAWTOOTH WAVE GENERATORS | 43 | 42 | 42 | 45 | 69 | 69 | 65 | 78 | |
| M | 758 M1-02 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS | 22 | 19 | 23 | 21 | 32 | 31 | 33 | 30 | |
| M | 759 M1-03 DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK | 27 | 27 | 24 | 32 | 39 | 54 | 39 | 30 | TIMING CIRCUITS |
| M | 760 M1-04 DO YOU WORK WITH PULSED OSCILLATORS WITHOUT REGENERATIVE FEEDBACK | 22 | 19 | 27 | 16 | 37 | 31 | 43 | 26 | |
| M | 761 M1-05 DO YOU WORK WITH BLOCKING OSCILLATORS | 24 | 19 | 24 | 29 | 39 | 54 | 37 | 35 | |
| M | 762 M1-06 DO YOU USE OR REFER TO RISE TIME | 68 | 54 | 71 | 71 | 85 | 77 | 90 | 78 | |
| M | 763 M1-07 DO YOU USE OR REFER TO FALL OR FLYBACK TIME | 63 | 50 | 69 | 61 | 70 | 54 | 75 | 70 | |
| M | 764 M1-08 DO YOU USE OR REFER TO SWEEP TIME | 67 | 58 | 70 | 66 | 82 | 85 | 84 | 74 | |
| M | 765 M1-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS | 52 | 42 | 51 | 61 | 51 | 54 | 49 | 52 | |
| M | 766 M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS | 50 | 35 | 49 | 61 | 55 | 69 | 57 | 43 | |
| M | 767 M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS | 41 | 23 | 41 | 55 | 45 | 46 | 39 | 57 | |
| M | 768 M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS | 39 | 27 | 41 | 45 | 43 | 54 | 45 | 30 | |
| M | 769 M2-01 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB | 36 | 46 | 34 | 34 | 76 | 85 | 75 | 74 | |
| M | 770 M2-02 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS | 32 | 46 | 24 | 39 | 62 | 69 | 61 | 61 | |
| M | 771 M2-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL | 14 | 19 | 13 | 13 | 32 | 54 | 27 | 30 | USE OF SIGNAL GENERATORS |
| M | 772 M2-04 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY W-ILE USING SIGNAL GENERATORS | 23 | 31 | 20 | 24 | 38 | 38 | 35 | 43 | |
| M | 773 M2-05 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS | 6 | 0 | 8 | 5 | 15 | 8 | 16 | 17 | |
| M | 774 M2-06 DO YOU USE AUDIO SINE-WAVE GENERATORS | 19 | 19 | 16 | 26 | 22 | 31 | 24 | 13 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | Dy-TSk | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| M 775 | M2-07 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE | 20 | 23 | 18 | 21 | 33 | 31 | 36 | 30 | |
| M 776 | M2-08 DO YOU USE RF GENERATORS LESS THAN 1,000 MH | 16 | 12 | 17 | 18 | 31 | 31 | 35 | 22 | |
| M 777 | M2-09 DO YOU USE RF GENERATORS GREATER THAN 1,000 MH | 25 | 27 | 22 | 32 | 71 | 77 | 75 | 61 | |
| M 778 | M2-10 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS | 26 | 23 | 25 | 29 | 53 | 62 | 53 | 48 | |
| M 779 | M3-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR | 31 | 27 | 31 | 32 | 15 | 15 | 12 | 22 | |
| M 780 | M3-02 DO YOU INSPECT MOTORS | 26 | 23 | 24 | 32 | 14 | 8 | 14 | 17 | MOTORS AND |
| M 781 | M3-03 DO YOU CLEAN OR LUBRICATE MOTORS | 12 | 12 | 12 | 11 | 9 | 8 | 8 | 13 | GENERATORS |
| M 782 | M3-04 DO YOU OPERATE MOTORS | 24 | 23 | 22 | 29 | 11 | 15 | 8 | 17 | |
| M 783 | M3-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS | 26 | 19 | 27 | 29 | 10 | 8 | 10 | 13 | |
| M 784 | M3-06 DO YOU REMOVE OR REPLACE MOTOR PARTS | 2 | 0 | 2 | 3 | 1 | 8 | 0 | 0 | |
| M 785 | M3-07 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS | 26 | 19 | 27 | 29 | 14 | 15 | 12 | 17 | |
| M 786 | M3-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS | 1 | 0 | 1 | 0 | 1 | 8 | 0 | 0 | |
| M 787 | M3-09 DO YOU PERFORM ANY TASKS ON FIELD COILS | 1 | 0 | 1 | 3 | 1 | 8 | 0 | 0 | |
| M 788 | M3-10 DO YOU PERFORM ANY TASKS ON ARMATURES | 1 | 0 | 1 | 3 | 1 | 8 | 0 | 0 | |
| M 789 | M3-11 DO YOU PERFORM ANY TASKS ON ROTORS | 1 | 0 | 1 | 3 | 1 | 8 | 0 | 0 | |
| M 790 | M3-12 DO YOU PERFORM ANY TASKS ON BRUSHES | 2 | 0 | 1 | 5 | 2 | 8 | 0 | 4 | |
| M 791 | M3-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS | 2 | 0 | 1 | 5 | 1 | 8 | 0 | 0 | |
| M 792 | M3-14 DO YOU PERFORM ANY TASKS ON COMMUTATORS | 1 | 0 | 1 | 3 | 1 | 8 | 0 | 0 | |
| M 793 | M3-15 DO YOU PERFORM ANY TASKS ON POLE PIECES | 1 | 0 | 1 | 3 | 1 | 8 | 0 | 0 | |
| M 794 | M3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR | 6 | 4 | 4 | 13 | 2 | 8 | 0 | 4 | |
| M 795 | M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR | 6 | 4 | 4 | 13 | 2 | 8 | 0 | 4 | |
| M 796 | M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS | 4 | 4 | 2 | 8 | 2 | 8 | 0 | 4 | |
| M 797 | M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS | 20 | 4 | 22 | 29 | 8 | 8 | 6 | 13 | |
| M 798 | M3-20 DO YOU WORK WITH INDUCTION MOTORS | 14 | 4 | 11 | 26 | 8 | 8 | 8 | 9 | |
| M 799 | M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS | 12 | 4 | 12 | 16 | 10 | 0 | 12 | 13 | |
| M 800 | M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS | 19 | 19 | 19 | 18 | 11 | 8 | 10 | 17 | |
| M 801 | M3-23 DO YOU INSPECT GENERATORS | 14 | 19 | 12 | 16 | 2 | 0 | 2 | 4 | |
| M 802 | M3-24 DO YOU CLEAN OR LUBRICATE GENERATORS | 4 | 4 | 5 | 3 | 1 | 0 | 0 | 4 | |
| M 803 | M3-25 DO YOU OPERATE GENERATORS | 14 | 15 | 11 | 21 | 5 | 8 | 2 | 9 | |
| M 804 | M3-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS | 10 | 12 | 7 | 13 | 0 | 0 | 0 | 0 | |
| M 805 | M3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| M 806 | M3-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS | 9 | 8 | 8 | 11 | 0 | 0 | 0 | 0 | |
| M 807 | M3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| M 808 | M1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB | 71 | 81 | 70 | 66 | 87 | 85 | 94 | 74 | |
| M 809 | M1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS | 10 | 0 | 13 | 11 | 11 | 15 | 10 | 13 | |
| M 810 | M1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS | 11 | 0 | 14 | 11 | 14 | 15 | 12 | 17 | METER MOVEMENTS |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| N 811 | N1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS | 11 | 0 | 13 | 13 | 10 | 8 | 10 | 13 | |
| N 812 | N1-05 DO YOU READ METER SCALES | 72 | 77 | 72 | 68 | 89 | 85 | 94 | 78 | |
| N 813 | N1-06 DO YOU EXTEND THE RANGE OF AMMETERS | 26 | 35 | 27 | 18 | 32 | 54 | 31 | 22 | |
| N 814 | N1-07 DO YOU ZERO OHMMETERS | 71 | 81 | 70 | 68 | 90 | 92 | 94 | 78 | |
| N 815 | N1-08 DO YOU ZERO AMMETERS | 32 | 38 | 25 | 42 | 47 | 69 | 47 | 35 | |
| N 816 | N1-09 DO YOU EXTEND THE RANGE OF VOLTMETERS | 44 | 46 | 45 | 39 | 62 | 85 | 59 | 57 | |
| N 817 | N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT) | 37 | 38 | 28 | 55 | 46 | 46 | 45 | 48 | |
| N 818 | N2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB | 5 | 4 | 5 | 8 | 5 | 0 | 4 | 9 | |
| N 819 | N2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS | 4 | 4 | 4 | 5 | 3 | 8 | 2 | 4 | SATURABLE REACTORS AND MAGNETIC |
| N 820 | N2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS | 3 | 4 | 4 | 3 | 3 | 8 | 2 | 4 | AMPLIFIERS |
| N 821 | N2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS | 2 | 4 | 2 | 0 | 3 | 8 | 2 | 4 | |
| N 822 | N2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS | 2 | 0 | 2 | 3 | 1 | 0 | 2 | 0 | |
| N 823 | N2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS | 3 | 0 | 4 | 5 | 1 | 0 | 2 | 0 | |
| N 824 | N2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | |
| N 825 | N2-08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS | 0 | 0 | 0 | 0 | 2 | 8 | 2 | 0 | |
| N 826 | N2-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF | 2 | 0 | 2 | 3 | 1 | 0 | 2 | 0 | |
| N 827 | N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE | 3 | 4 | 2 | 3 | 2 | 0 | 2 | 4 | |
| N 828 | N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS | 3 | 0 | 2 | 5 | 3 | 15 | 2 | 0 | |
| N 829 | N2-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE REACTORS | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | |
| N 830 | N2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN SATURABLE REACTORS | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | |
| N 831 | N2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE REACTORS | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | |
| N 832 | N2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN SATURABLE REACTORS | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | |
| N 833 | N2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS | 1 | 0 | 1 | 3 | 2 | 0 | 2 | 4 | |
| N 834 | N3-01 DO YOU WORK WITH WAVES-APING CIRCUITS IN YOUR PRESENT JOB | 47 | 42 | 46 | 53 | 84 | 92 | 82 | 83 | |
| N 835 | N3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS | 20 | 15 | 20 | 24 | 31 | 15 | 33 | 35 | |
| N 836 | N3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW) | 45 | 35 | 46 | 50 | 83 | 77 | 84 | 83 | WAVESHAPING |
| N 837 | N3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT) | 41 | 27 | 43 | 45 | 75 | 77 | 78 | 65 | CIRCUITS |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| N | 838 N3-05 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF) | 42 | 31 | 42 | 50 | 75 | 77 | 75 | 74 | |
| N | 839 N3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS | 24 | 19 | 22 | 34 | 53 | 46 | 57 | 48 | |
| N | 840 N3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS | 32 | 23 | 31 | 39 | 63 | 69 | 63 | 61 | |
| N | 841 N3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT | 20 | 19 | 18 | 26 | 28 | 54 | 22 | 26 | |
| N | 842 N3-09 DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT | 6 | 4 | 7 | 5 | 13 | 23 | 12 | 9 | |
| N | 843 N3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS | 35 | 42 | 29 | 45 | 67 | 77 | 65 | 65 | |
| N | 844 N3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS | 29 | 27 | 24 | 39 | 53 | 69 | 47 | 57 | |
| 0 | 845 01-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR PRESENT JOB | 2 | 4 | 2 | 0 | 7 | 31 | 2 | 4 | |
| 0 | 846 01-02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS | 1 | 0 | 1 | 0 | 3 | 15 | 0 | 4 | |
| 0 | 847 01-03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS | 0 | 0 | 0 | 0 | 2 | 8 | 0 | 4 | SINGLE SIDEBAND |
| 0 | 848 01-04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS | 1 | 0 | 1 | 0 | 3 | 15 | 0 | 4 | SYSTEMS |
| 0 | 849 01-05 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE SYSTEMS | 1 | 0 | 1 | 0 | 3 | 15 | 0 | 4 | |
| 0 | 850 01-06 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE COMPONENTS | 0 | 0 | 0 | 0 | 3 | 15 | 0 | 4 | |
| 0 | 851 01-07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE SYSTEMS | 1 | 0 | 1 | 0 | 3 | 15 | 0 | 4 | |
| 0 | 852 01-08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE COMPONENTS | 0 | 0 | 0 | 0 | 3 | 15 | 0 | 4 | |
| 0 | 853 01-09 DO YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS | 0 | 0 | 0 | 0 | 2 | 8 | 0 | 4 | |
| 0 | 854 01-10 DO YOU PERFORM TASKS ON SSB BALANCED MODULATORS | 0 | 0 | 0 | 0 | 2 | 8 | 0 | 4 | |
| 0 | 855 01-11 DO YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | |
| 0 | 856 01-12 DO YOU PERFORM TASKS ON SSB LC FILTERS | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | |
| 0 | 857 01-13 DO YOU PERFORM TASKS ON SSB CRYSTAL FILTERS | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | |
| 0 | 858 01-14 DO YOU PERFORM TASKS ON SSB MECHANICAL FILTERS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 0 | 859 01-15 DO YOU PERFORM TASKS ON SSB OSCILLATORS | 0 | 0 | 0 | 0 | 2 | 8 | 0 | 4 | |
| 0 | 860 01-16 DO YOU PERFORM TASKS ON SSB MIXERS | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 4 | |
| 0 | 861 01-17 DO YOU PERFORM TASKS ON SSB DRIVERS | 1 | 0 | 1 | 0 | 2 | 8 | 0 | 4 | |
| 0 | 862 01-18 DO YOU PERFORM TASKS ON SSB POWER AMPLIFIERS | 1 | 0 | 1 | 0 | 2 | 8 | 0 | 4 | |
| 0 | 863 01-19 DO YOU PERFORM TASKS ON SSB RF AMPLIFIERS | 1 | 0 | 1 | 0 | 2 | 8 | 0 | 4 | |
| 0 | 864 01-20 DO YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS | 0 | 0 | 0 | 0 | 2 | 8 | 0 | 4 | |
| 0 | 865 01-21 DO YOU PERFORM TASKS ON SSB IF AMPLIFIERS | 1 | 0 | 1 | 0 | 2 | 8 | 0 | 4 | |
| 0 | 866 01-22 DO YOU PERFORM TASKS ON SSB DEMODULATORS | 0 | 0 | 0 | 0 | 2 | 8 | 0 | 4 | |
| 0 | 867 01-23 DO YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB SYSTEM STAGES | 0 | 0 | 0 | 0 | 3 | 23 | 0 | 0 | |
| 0 | 868 01-24 DO YOU USE OR REFER TO SELECTIVE FADING | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 0 | 869 01-25 DO YOU USE OR REFER TO PEAK POWER | 0 | 0 | 0 | 0 | 3 | 15 | 0 | 4 | |
| 0 | 870 01-26 DO YOU USE OR REFER TO FREQUENCY STABILITY | 0 | 0 | 0 | 0 | 3 | 15 | 0 | 4 | |
| 0 | 871 01-27 DO YOU USE OR REFER TO RESPONSE CURVES FOR BANDWIDTH FILTERS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 0 | 872 01-28 DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB TRANSMITTERS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| 873 | 01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB TRANSMITTER SCHEMATIC DIAGRAMS | 1 | 0 | 1 | 0 | 2 | 8 | 0 | 4 | |
| 874 | 01-30 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB RECEIVER SCHEMATIC DIAGRAMS | 1 | 0 | 1 | 0 | 2 | 8 | 0 | 4 | |
| 875 | 02-01 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JOB | 22 | 23 | 23 | 21 | 57 | 77 | 55 | 52 | |
| 876 | 02-02 DO YOU INSPECT PULSE MODULATION SYSTEMS | 20 | 23 | 19 | 21 | 47 | 54 | 51 | 35 | PULSE MODULATION SYSTEMS |
| 877 | 02-03 DO YOU CLEAN PULSE MODULATION SYSTEMS | 14 | 15 | 14 | 11 | 31 | 31 | 35 | 22 | |
| 878 | 02-04 DO YOU ALIGN PULSE MODULATION SYSTEMS | 18 | 23 | 16 | 21 | 49 | 62 | 51 | 39 | |
| 879 | 02-05 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS | 18 | 15 | 19 | 16 | 48 | 46 | 51 | 43 | |
| 880 | 02-06 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM COMPONENTS | 10 | * | 11 | 11 | 37 | 46 | 35 | 35 | |
| 881 | 02-07 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS | 18 | 19 | 17 | 18 | 46 | 46 | 53 | 30 | |
| 882 | 02-08 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM COMPONENTS | 7 | 4 | 7 | 8 | 31 | 46 | 31 | 22 | |
| 883 | 02-09 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM) SYSTEMS | 9 | 4 | 11 | 8 | 40 | 54 | 35 | 43 | |
| 884 | 02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM) SYSTEMS | 7 | 4 | 8 | 5 | 29 | 31 | 27 | 30 | |
| 885 | 02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM) SYSTEMS | 4 | 4 | 5 | 3 | 26 | 31 | 24 | 30 | |
| 886 | 02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS | 1 | 4 | 1 | 0 | 15 | 8 | 18 | 13 | |
| 887 | 02-13 DO YOU WORK ON LINE PULSING MODULATION SYSTEMS | 4 | 4 | 4 | 5 | 9 | 15 | 8 | 9 | |
| 888 | 02-14 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF MODULATION SYSTEM | 13 | 19 | 12 | 11 | 20 | 38 | 18 | 13 | |
| 889 | 02-15 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES | 16 | 19 | 14 | 16 | 43 | 38 | 45 | 39 | |
| 890 | 02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODES | 5 | 8 | 6 | 3 | 8 | 0 | 14 | 0 | |
| 891 | 02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS | 12 | 15 | 11 | 11 | 39 | 38 | 37 | 43 | |
| 892 | 02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMERS | 10 | 15 | 11 | 5 | 33 | 23 | 33 | 39 | |
| 893 | 02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATRONS | 5 | 8 | 4 | 5 | 5 | 0 | 6 | 4 | |
| 894 | 02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS | 9 | 8 | 10 | 8 | 22 | 8 | 24 | 26 | |
| 895 | 02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBES | 12 | 12 | 11 | 13 | 34 | 38 | 35 | 30 | |
| 896 | 02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIERS | 16 | 19 | 12 | 21 | 41 | 46 | 41 | 39 | |
| 897 | 02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS | 14 | 15 | 12 | 16 | 26 | 31 | 31 | 13 | |
| 898 | 02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIERS | 17 | 15 | 16 | 21 | 31 | 31 | 35 | 22 | |
| 899 | 02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTORS | 15 | 12 | 14 | 18 | 43 | 38 | 39 | 52 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 900 | 02-26 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS | 17 | 15 | 16 | 21 | 36 | 23 | 39 | 35 | |
| 0 901 | 02-27 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS | 12 | 12 | 13 | 11 | 24 | 15 | 33 | 17 | |
| 0 902 | 02-28 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES | 5 | 4 | 7 | 3 | 15 | 31 | 14 | 9 | |
| 0 903 | 02-29 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF) | 19 | 15 | 18 | 24 | 52 | 54 | 49 | 57 | |
| 0 904 | 02-30 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT) | 16 | 12 | 16 | 18 | 48 | 54 | 47 | 48 | |
| 0 905 | 02-31 DO YOU USE OR REFER TO PULSE WIDTH (PW) | 20 | 19 | 19 | 24 | 56 | 62 | 55 | 57 | |
| 0 906 | 02-32 DO YOU USE OR REFER TO PULSE SHAPE | 20 | 19 | 19 | 21 | 53 | 62 | 49 | 57 | |
| 0 907 | 02-33 DO YOU USE OR REFER TO PEAK POWER | 18 | 19 | 17 | 18 | 47 | 62 | 43 | 48 | |
| 0 908 | 02-34 DO YOU USE OR REFER TO AVERAGE POWER | 17 | 19 | 16 | 18 | 37 | 46 | 33 | 39 | |
| 0 909 | 02-35 DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF) | 7 | 8 | 10 | 3 | 34 | 38 | 29 | 43 | |
| 0 910 | 02-36 DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF) | 16 | 8 | 14 | 24 | 48 | 46 | 47 | 52 | |
| 0 911 | 02-37 DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS | 3 | 4 | 5 | 0 | 11 | 8 | 16 | 4 | |
| 0 912 | 02-38 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS | 13 | 15 | 10 | 18 | 43 | 54 | 39 | 43 | |
| 0 913 | 02-39 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS | 15 | 15 | 13 | 18 | 47 | 62 | 43 | 48 | |
| 0 914 | 03-01 DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB | 46 | 42 | 47 | 45 | 41 | 38 | 39 | 48 | |
| 0 915 | 03-02 DO YOU INSPECT ANTENNAS | 45 | 42 | 45 | 47 | 37 | 23 | 35 | 48 | |
| 0 916 | 03-03 DO YOU CLEAN ANTENNAS | 41 | 42 | 42 | 39 | 28 | 8 | 33 | 26 | |
| 0 917 | 03-04 DO YOU PHYSICALLY ALIGN ANTENNAS | 24 | 23 | 28 | 16 | 1 | 0 | 2 | 0 | ANTENNAS |
| 0 918 | 03-05 DO YOU ELECTRICALLY ALIGN ANTENNAS | 41 | 38 | 41 | 42 | 3 | 0 | 4 | 4 | |
| 0 919 | 03-06 DO YOU TROUBLESHOOT TO ANTENNAS | 38 | 38 | 37 | 39 | 24 | 0 | 25 | 35 | |
| 0 920 | 03-07 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS | 36 | 35 | 37 | 34 | 5 | 0 | 6 | 4 | |
| 0 921 | 03-08 DO YOU REMOVE OR INSTALL ANTENNAS | 29 | 27 | 28 | 32 | 25 | 0 | 33 | 22 | |
| 0 922 | 03-09 DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS | 36 | 31 | 37 | 37 | 10 | 15 | 8 | 13 | |
| 0 923 | 03-10 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES | 1 | 0 | 2 | 0 | 2 | 0 | 2 | 4 | |
| 0 924 | 03-11 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES | 1 | 0 | 2 | 0 | 1 | 0 | 2 | 0 | |
| 0 925 | 03-12 DO YOU DETERMINE THE DIRECTION OF THE MAGNETIC LINES IN RELATION TO THE ELECTRIC LINES OF FORCE FOR ANTENNAS | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | |
| 0 926 | 03-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE OF CORRECT LENGTH (HALF-WAVE) ACT AS | 1 | 0 | 1 | 3 | 2 | 0 | 4 | 0 | |
| 0 927 | 03-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE LONGER THAN A HALF-WAVE ACT AS INDUCTIVE LOADS | 1 | 0 | 1 | 3 | 2 | 0 | 4 | 0 | |
| 0 928 | 03-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE SHORTER THAN A HALF-WAVE ACT AS CAPACITIVE LOADS | 1 | 0 | 1 | 3 | 2 | 0 | 4 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 929 | 03-16 DO YOU WORK WITH HERTZ ANTENNAS | 5 | 8 | 5 | 3 | 5 | 0 | 6 | 4 | |
| 0 | 930 | 03-17 DO YOU WORK WITH MARCONI ANTENNAS | 1 | 0 | 1 | 3 | 3 | 0 | 2 | 9 | |
| 0 | 931 | 03-18 DO YOU WORK WITH BROADSIDE ARRAYS | 4 | 4 | 5 | 3 | 3 | 0 | 4 | 4 | |
| 0 | 932 | 03-19 DO YOU WORK WITH END-FIRE ARRAYS | 3 | 4 | 4 | 3 | 6 | 8 | 8 | 0 | |
| 0 | 933 | 03-20 DO YOU WORK WITH CARDIOID ARRAYS | 2 | 4 | 1 | 3 | 7 | 0 | 4 | 17 | |
| 0 | 934 | 03-21 DO YOU WORK WITH COLLINEAR ARRAYS | 5 | 8 | 6 | 3 | 3 | 0 | 2 | 9 | |
| 0 | 935 | 03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | |
| 0 | 936 | 03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS | 1 | 0 | 1 | 0 | 2 | 0 | 2 | 4 | |
| 0 | 937 | 03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS | 3 | 4 | 4 | 0 | 2 | 0 | 4 | 0 | |
| 0 | 938 | 03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | |
| 0 | 939 | 03-26 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION | 1 | 0 | 2 | 0 | 1 | 0 | 2 | 0 | |
| 0 | 940 | 03-27 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | |
| 0 | 941 | 03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED | 14 | 12 | 16 | 13 | 7 | 0 | 8 | 9 | |
| 0 | 942 | 03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED | 18 | 12 | 17 | 24 | 8 | 8 | 4 | 17 | |
| 0 | 943 | 03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON | 9 | 0 | 11 | 11 | 2 | 0 | 4 | 0 | |
| 0 | 944 | 03-31 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR | 1 | 0 | 2 | 0 | 1 | 0 | 2 | 0 | |
| 0 | 945 | 03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS | 5 | 4 | 6 | 5 | 1 | 0 | 2 | 0 | |
| 0 | 946 | 03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS | 5 | 0 | 6 | 5 | 1 | 0 | 2 | 0 | |
| 0 | 947 | 03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS | 5 | 4 | 6 | 5 | 2 | 0 | 2 | 4 | |
| 0 | 948 | 03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS | 23 | 27 | 23 | 21 | 22 | 31 | 20 | 22 | |
| 0 | 949 | 03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS | 14 | 15 | 13 | 13 | 18 | 0 | 20 | 26 | |
| 0 | 850 | 03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS | 14 | 12 | 14 | 13 | 6 | 8 | 6 | 4 | |
| 0 | 851 | 03-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY | 18 | 19 | 19 | 13 | 14 | 23 | 12 | 13 | |
| 0 | 852 | 03-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS | 5 | 4 | 5 | 8 | 0 | 0 | 0 | 0 | |
| P | 953 | P1-01 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS | 9 | 12 | 6 | 11 | 31 | 54 | 31 | 17 | |
| P | 954 | P1-02 DO YOU REFER TO OR USE COPPER LOSS OR I2R LOSS IN TRANSMISSION LINES | 1 | 0 | 0 | 3 | 2 | 0 | 2 | 4 | TRANSMISSION LINES |
| P | 955 | P1-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES | 3 | 4 | 2 | 3 | 6 | 8 | 6 | 4 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 |
|---|---|---|---|---|---|---|---|---|---|
| P 956 | PI-04 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES | 3 | 4 | 1 | 5 | 15 | 15 | 16 | 13 |
| P 957 | PI-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES | 2 | 0 | 1 | 5 | 2 | 0 | 2 | 4 |
| P 958 | PI-06 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES | 3 | 4 | 2 | 5 | 11 | 15 | 10 | 13 |
| P 959 | PI-07 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES | 4 | 4 | 4 | 5 | 5 | 8 | 4 | 4 |
| P 960 | PI-08 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES | 4 | 8 | 4 | 3 | 3 | 8 | 2 | 4 |
| P 961 | PI-09 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES | 2 | 4 | 1 | 3 | 2 | 0 | 2 | 4 |
| P 962 | PI-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES | 8 | 12 | 6 | 11 | 26 | 31 | 29 | 17 |
| P 963 | PI-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES | 7 | 12 | 5 | 8 | 26 | 31 | 31 | 13 |
| P 964 | PI-12 DO YOU TROUBLESHOOT TRANSMISSION LINES | 6 | 8 | 4 | 11 | 20 | 31 | 22 | 9 |
| P 965 | PI-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION | 0 | 0 | 0 | 0 | 5 | 8 | 6 | 0 |
| P 966 | PI-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS | 1 | 4 | 0 | 0 | 8 | 0 | 12 | 4 |
| P 967 | PI-15 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS | 3 | 8 | 1 | 5 | 9 | 15 | 8 | 9 |
| P 968 | PI-16 DO YOU MEASURE STANDING WAVE RATIOS (SR) OF TRANSMISSION LINES | 2 | 4 | 1 | 3 | 6 | 0 | 6 | 9 |
| P 969 | PI-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES | 1 | 4 | 0 | 3 | 1 | 0 | 0 | 4 |
| P 970 | PI-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 |
| P 971 | PI-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS | 2 | 0 | 1 | 5 | 7 | 0 | 10 | 4 |
| P 972 | PI-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING | 0 | 0 | 0 | 0 | 5 | 0 | 6 | 4 |
| P 973 | PI-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 |
| P 974 | PI-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES | 1 | 4 | 0 | 0 | 2 | 8 | 2 | 0 |
| P 975 | PI-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| P 976 | PI-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 |
| P 977 | PI-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (V) OF TRANSMISSION LINES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| P 978 | PI-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| P 979 | PI-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES | 1 | 0 | 0 | 3 | 1 | 0 | 0 | 4 |
| P 980 | PI-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF | 0 | 0 | 0 | 0 | 2 | 8 | 2 | 0 |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| P 981 | P1-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES | 2 | 0 | 2 | 3 | 3 | 8 | 4 | 0 | |
| P 982 | P1-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES | 3 | 8 | 1 | 3 | 9 | 8 | 12 | 4 | |
| P 983 | P1-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING | 1 | 4 | 0 | 3 | 2 | 0 | 2 | 4 | |
| P 984 | P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB | 56 | 58 | 52 | 63 | 30 | 31 | 27 | 35 | |
| P 985 | P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS | 54 | 58 | 48 | 63 | 28 | 15 | 29 | 30 | WAVEGUIDES AND CAVITY RESONATORS |
| P 986 | P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS | 33 | 27 | 34 | 34 | 22 | 8 | 25 | 22 | |
| P 987 | P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS | 6 | 8 | 6 | 5 | 5 | 8 | 6 | 0 | |
| P 988 | P2-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS | 5 | 4 | 6 | 5 | 3 | 8 | 4 | 0 | |
| P 989 | P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS | 46 | 46 | 43 | 53 | 2 | 0 | 4 | 0 | |
| P 990 | P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS | 16 | 12 | 12 | 26 | 1 | 0 | 2 | 0 | |
| P 991 | P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS | 31 | 19 | 31 | 37 | 15 | 8 | 16 | 17 | |
| P 992 | P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES | 48 | 46 | 46 | 55 | 25 | 15 | 24 | 35 | |
| P 993 | P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS | 44 | 35 | 43 | 53 | 17 | 15 | 16 | 22 | |
| P 994 | P2-11 DO YOU REMOVE OR INSTALL DUMMY LOADS | 31 | 27 | 30 | 37 | 25 | 15 | 24 | 35 | |
| P 995 | P2-12 DO YOU REMOVE OR INSTALL E BENDS | 8 | 0 | 10 | 11 | 3 | 0 | 6 | 0 | |
| P 996 | P2-13 DO YOU REMOVE OR INSTALL H BENDS | 11 | 4 | 11 | 16 | 3 | 0 | 6 | 0 | |
| P 997 | P2-14 DO YOU REMOVE OR INSTALL OTHER BENDS | 17 | 12 | 19 | 16 | 5 | 0 | 4 | 9 | |
| P 998 | P2-15 DO YOU REMOVE OR INSTALL CHOKE JOINTS | 8 | 0 | 8 | 13 | 2 | 0 | 2 | 4 | |
| P 999 | P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS | 8 | 12 | 7 | 8 | 1 | 0 | 2 | 0 | |
| P1000 | P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS | 16 | 8 | 16 | 21 | 23 | 15 | 24 | 26 | |
| P1001 | P2-18 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS | 12 | 4 | 12 | 18 | 13 | 8 | 12 | 17 | |
| P1002 | P2-19 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES | 4 | 0 | 5 | 5 | 1 | 0 | 2 | 0 | |
| P1003 | P2-20 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES | 4 | 0 | 5 | 5 | 1 | 0 | 2 | 0 | |
| P1004 | P2-21 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES | 3 | 0 | 4 | 5 | 6 | 0 | 8 | 4 | |
| P1005 | P2-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES | 3 | 0 | 4 | 5 | 2 | 8 | 2 | 0 | |
| P1006 | P2-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES | 2 | 0 | 0 | 8 | 2 | 8 | 2 | 0 | |
| P1007 | P2-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | |
| P1008 | P2-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | |
| P1009 | P2-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS | 2 | 0 | 2 | 3 | 1 | 0 | 2 | 0 | |
| P1010 | P2-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OF .7 WAVELENGTHS | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | |
| P1011 | P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35 | 0 | 0 | 0 | 0 | 2 | 8 | 2 | 0 | |
| P1012 | P2-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF | 3 | 0 | 4 | 3 | 1 | 0 | 2 | 0 | |
| P1013 | P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION | 1 | 0 | 1 | 0 | 2 | 8 | 2 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| P1014 | P2-31 DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE DIRECTION OF PROPAGATION, DIRECTION OF *E* FIELD, OR | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | |
| P1015 | P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK *E* OR *H* LINES IN *WAVEGUIDES | 1 | 0 | 1 | 0 | 2 | 8 | 2 | 0 | |
| P1016 | P2-33 DO YOU MEASURE THE TIME PHASE OF *E* OR *H* LINES IN *WAVEGUIDES | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | |
| P1017 | P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF *E* OR *H* LINES IN WAVEGUIDES | 0 | 0 | 0 | 0 | 2 | 8 | 2 | 0 | |
| P1018 | P2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 8 | 0 | 7 | 16 | 3 | 0 | 6 | 0 | |
| P1019 | P2-36 ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 7 | 0 | 10 | 8 | 7 | 0 | 10 | 4 | |
| P1020 | P2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 5 | 0 | 5 | 8 | 2 | 0 | 2 | 4 | |
| P1021 | P2-38 ARE APERTURES (WINDOWS OR IRISES) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 14 | 0 | 16 | 21 | 3 | 8 | 4 | 0 | |
| P1022 | P2-39 ARE DON'T REMEMBER THE KIND OF ENERGY COUPLING USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 22 | 31 | 20 | 18 | 13 | 15 | 8 | 22 | |
| P1023 | P2-40 DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO | 0 | 0 | 0 | 0 | 2 | 8 | 2 | 0 | |
| P1024 | P2-41 DO YOU DETERMINE THE POSITIONING OF LOOPS IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | |
| P1025 | P2-42 DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | |
| P1026 | P2-43 ARE CHOKE JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 4 | 0 | 5 | 5 | 5 | 8 | 4 | 4 | |
| P1027 | P2-44 ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 16 | 8 | 17 | 21 | 3 | 0 | 4 | 4 | |
| P1028 | P2-45 ARE DON'T REMEMBER THE KIND OF JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH | 24 | 27 | 27 | 18 | 11 | 8 | 10 | 17 | |
| P1029 | P2-46 DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING | 5 | 4 | 6 | 5 | 2 | 8 | 2 | 0 | |
| P1030 | P2-47 DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING | 5 | 4 | 4 | 8 | 2 | 8 | 2 | 0 | |
| P1031 | P2-48 DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING | 10 | 8 | 13 | 5 | 5 | 8 | 6 | 0 | |
| P1032 | P2-49 DO YOU TUNE CAVITY RESONATORS USING DON'T REMEMBER THE METHOD OF TUNING | 20 | 19 | 19 | 21 | 9 | 15 | 8 | 9 | |
| P1033 | P2-50 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS | 27 | 15 | 25 | 37 | 8 | 8 | 10 | 4 | |
| P1034 | P3-01 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR | 41 | 46 | 35 | 42 | 85 | 92 | 86 | 78 | |
| P1035 | P3-02 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE | 4 | 0 | 5 | 5 | 23 | 23 | 22 | 26 | MICROWAVE AMPLIFIERS AND OSCILLATORS |
| P1036 | P3-03 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME | 3 | 4 | 2 | 5 | 14 | 8 | 12 | 22 | |
| P1037 | P3-04 DO YOU USE OR REFER TO LEAD INDUCTANCE | 2 | 0 | 2 | 3 | 10 | 0 | 12 | 13 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 |
|---|---|---|---|---|---|---|---|---|---|
| P1038 | P3-05 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL CIRCUITRY | 7 | 0 | 8 | 11 | 38 | 38 | 37 | 39 |
| P1039 | P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION | 3 | 0 | 4 | 3 | 17 | 8 | 20 | 17 |
| P1040 | P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING | 3 | 0 | 4 | 3 | 21 | 23 | 18 | 26 |
| P1041 | P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS | 5 | 8 | 6 | 3 | 2 | 8 | 0 | 4 |
| P1042 | P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS | 2 | 8 | 1 | 0 | 2 | 8 | 0 | 4 |
| P1043 | P3-10 DO YOU WORK WITH REFLEX KLYSTRONS | 30 | 38 | 29 | 26 | 2 | 8 | 2 | 0 |
| P1044 | P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT) | 12 | 4 | 17 | 8 | 83 | 85 | 84 | 78 |
| P1045 | P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC AMPLIFIERS | 2 | 0 | 1 | 5 | 3 | 8 | 2 | 4 |
| P1046 | P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS | 2 | 0 | 1 | 5 | 3 | 15 | 2 | 0 |
| P1047 | P3-14 DO YOU WORK WITH MAGNETRONS | 35 | 42 | 34 | 34 | 10 | 23 | 6 | 13 |
| P1048 | P3-15 DO YOU INSPECT KLYSTRONS OR TWT | 32 | 38 | 30 | 32 | 66 | 69 | 63 | 70 |
| P1049 | P3-16 DO YOU CLEAN KLYSTRONS OR TWT | 15 | 15 | 17 | 11 | 38 | 38 | 37 | 39 |
| P1050 | P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY | 25 | 31 | 25 | 21 | 56 | 46 | 55 | 65 |
| P1051 | P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY | 32 | 31 | 34 | 29 | 17 | 38 | 18 | 4 |
| P1052 | P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR TWT | 33 | 38 | 31 | 32 | 76 | 77 | 75 | 78 |
| P1053 | P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT | 26 | 31 | 27 | 21 | 56 | 62 | 55 | 57 |
| P1054 | P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT | 33 | 38 | 33 | 32 | 76 | 69 | 75 | 83 |
| P1055 | P3-22 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS | 5 | 8 | 4 | 5 | 13 | 31 | 10 | 9 |
| P1056 | P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS | 3 | 4 | 1 | 5 | 3 | 8 | 2 | 4 |
| P1057 | P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS | 2 | 4 | 1 | 3 | 3 | 15 | 2 | 0 |
| P1058 | P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS | 3 | 4 | 4 | 3 | 5 | 23 | 2 | 0 |
| P1059 | P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS | 3 | 4 | 2 | 3 | 5 | 23 | 2 | 0 |
| P1060 | P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS | 5 | 4 | 4 | 8 | 5 | 23 | 2 | 0 |
| P1061 | P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS | 2 | 4 | 1 | 3 | 5 | 23 | 2 | 0 |
| P1062 | P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER | 5 | 4 | 5 | 8 | 6 | 23 | 2 | 4 |
| P1063 | P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS | 1 | 4 | 1 | 0 | 3 | 15 | 2 | 0 |
| P1064 | P3-31 DO YOU INSPECT MAGNETRONS | 35 | 38 | 35 | 32 | 5 | 15 | 2 | 4 |
| P1065 | P3-32 DO YOU CLEAN MAGNETRONS | 22 | 23 | 24 | 18 | 3 | 15 | 0 | 4 |
| P1066 | P3-33 DO YOU ADJUST MAGNETRONS | 29 | 38 | 28 | 24 | 2 | 15 | 0 | 0 |
| P1067 | P3-34 DO YOU TUNE MAGNETRONS | 31 | 38 | 31 | 24 | 2 | 15 | 0 | 0 |
| P1068 | P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS | 35 | 38 | 35 | 32 | 3 | 15 | 2 | 0 |
| P1069 | P3-36 DO YOU TROUBLESHOOT MAGNETRONS | 29 | 27 | 29 | 29 | 3 | 8 | 2 | 4 |
| P1070 | P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON | 35 | 38 | 35 | 34 | 5 | 8 | 2 | 9 |
| P1071 | P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS | 10 | 12 | 10 | 8 | 1 | 8 | 0 | 0 |
| P1072 | P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| P1073 | P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 0 |
| P1074 | P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRIDS | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 0 |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 |
|---|---|---|---|---|---|---|---|---|
| P1075 P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS | 1 | 0 | 1 | 3 | 1 | 8 | 0 | 0 |
| P1076 P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS DRIFT SPACES | 1 | 0 | 1 | 0 | 1 | 8 | 0 | 0 |
| P1077 P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER GRIDS | 1 | 0 | 0 | 3 | 1 | 8 | 0 | 0 |
| P1078 P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER CAVITIES | 1 | 0 | 0 | 3 | 1 | 8 | 0 | 0 |
| P1079 P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS | 1 | 0 | 0 | 3 | 2 | 15 | 0 | 0 |
| P1080 P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES | 1 | 0 | 1 | 3 | 2 | 15 | 0 | 0 |
| P1081 P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REPELLER (REFLECTOR) PLATES | 7 | 4 | 7 | 11 | 2 | 15 | 0 | 0 |
| P1082 P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS | 6 | 4 | 6 | 8 | 3 | 23 | 0 | 0 |
| P1083 P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS | 4 | 0 | 4 | 8 | 2 | 15 | 0 | 0 |
| P1084 P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES | 9 | 0 | 11 | 11 | 2 | 15 | 0 | 0 |
| P1085 P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS | 3 | 4 | 2 | 5 | 2 | 15 | 0 | 0 |
| P1086 P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS | 9 | 0 | 11 | 11 | 2 | 15 | 0 | 0 |
| P1087 P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES | 7 | 0 | 8 | 11 | 2 | 15 | 0 | 0 |
| P1088 P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS | 10 | 4 | 8 | 16 | 2 | 15 | 0 | 0 |
| P1089 P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS | 2 | 0 | 4 | 0 | 57 | 46 | 50 | 61 |
| P1090 P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES | 1 | 0 | 2 | 0 | 66 | 62 | 69 | 61 |
| P1091 P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS | 1 | 0 | 1 | 3 | 56 | 46 | 57 | 61 |
| P1092 P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES | 2 | 0 | 2 | 3 | 57 | 54 | 59 | 57 |
| P1093 P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELIXES | 1 | 0 | 1 | 3 | 52 | 38 | 53 | 57 |
| P1094 P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS | 3 | 4 | 4 | 3 | 61 | 62 | 65 | 52 |
| P1095 P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS | 3 | 4 | 2 | 5 | 29 | 38 | 29 | 22 |
| P1096 P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENUATORS | 3 | 0 | 4 | 5 | 49 | 85 | 45 | 39 |
| P1097 P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 |
| P1098 P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | BY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| P1099 | P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLER CAVITIES | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | |
| P1100 | P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | |
| P1101 | P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | |
| P1102 | P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | |
| P1103 | P3-70 DO YOU PERFORM TASKS ON ANODES | 3 | 0 | 5 | 0 | 5 | 23 | 0 | 4 | |
| P1104 | P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS | 1 | 0 | 2 | 0 | 3 | 15 | 0 | 4 | |
| P1105 | P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS | 3 | 0 | 4 | 3 | 3 | 15 | 0 | 4 | |
| P1106 | P3-73 DO YOU PERFORM TASKS ON HEATER LEADS | 3 | 0 | 5 | 0 | 5 | 23 | 0 | 4 | |
| P1107 | P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES | 6 | 4 | 6 | 8 | 3 | 15 | 0 | 4 | |
| P1108 | P3-75 DO YOU PERFORM TASKS ON CATHODES | 5 | 0 | 6 | 5 | 5 | 23 | 0 | 4 | |
| P1109 | P3-76 DO YOU PERFORM TASKS ON MAGNETS | 4 | 0 | 6 | 3 | 3 | 15 | 0 | 4 | |
| Q1110 | Q1-01 DO YOU USE OR REFER TO STORAGE REGISTERS | 24 | 15 | 23 | 32 | 24 | 31 | 22 | 26 | |
| Q1111 | Q1-02 DO YOU USE OR REFER TO SHIFT REGISTERS | 24 | 15 | 23 | 34 | 33 | 31 | 31 | 39 | |
| Q1112 | Q1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS | 24 | 15 | 24 | 32 | 31 | 31 | 29 | 35 | REGISTERS |
| Q1113 | Q1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS | 24 | 15 | 24 | 29 | 22 | 23 | 22 | 22 | |
| Q1114 | Q1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS | 18 | 15 | 16 | 26 | 31 | 8 | 33 | 39 | |
| Q1115 | Q1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS | 16 | 12 | 13 | 24 | 22 | 8 | 22 | 30 | |
| Q1116 | Q1-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES | 7 | 4 | 5 | 13 | 22 | 15 | 27 | 26 | |
| Q1117 | Q2-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB | 32 | 31 | 31 | 34 | 34 | 38 | 31 | 39 | |
| Q1118 | Q2-02 DO YOU USE OR REFER TO DELAY LINES | 18 | 27 | 17 | 16 | 29 | 38 | 25 | 30 | |
| Q1119 | Q2-03 DO YOU USE OR REFER TO MAGNETIC CORES | 22 | 19 | 23 | 24 | 7 | 23 | 4 | 4 | STORAGE DEVICES |
| Q1120 | Q2-04 DO YOU USE OR REFER TO MAGNETIC DRUMS | 5 | 4 | 6 | 5 | 6 | 23 | 4 | 0 | |
| Q1121 | Q2-05 DO YOU USE OR REFER TO MAGNETIC TAPES | 22 | 19 | 20 | 26 | 16 | 23 | 8 | 30 | |
| Q1122 | Q2-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED OR MEMORY SYSTEMS | 16 | 12 | 14 | 21 | 20 | 23 | 14 | 30 | |
| Q1123 | Q2-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS | 19 | 19 | 18 | 21 | 9 | 8 | 6 | 17 | |
| Q1124 | Q2-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS | 10 | 8 | 8 | 16 | 6 | 8 | 6 | 4 | |
| Q1125 | Q2-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES | 10 | 8 | 8 | 16 | 17 | 23 | 16 | 17 | |
| Q1126 | Q3-01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D) | 39 | 35 | 37 | 47 | 23 | 46 | 12 | 35 | |
| Q1127 | Q3-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT | 2 | 0 | 2 | 3 | 1 | 8 | 0 | 0 | DIGITAL TO ANALOG CONVERTERS |
| Q1128 | Q3-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) | 2 | 0 | 2 | 3 | 1 | 8 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| 01129 | Q3-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS | 2 | 0 | 2 | 3 | 3 | 15 | 2 | 0 | |
| 01130 | Q3-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS | 5 | 9 | 5 | 5 | 2 | 0 | 4 | 0 | |
| 01131 | Q3-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS | 6 | 8 | 5 | 8 | 1 | 0 | 2 | 0 | |
| 01132 | Q3-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS | 6 | 12 | 4 | 8 | 2 | 0 | 4 | 0 | |
| 01133 | Q3-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS | 5 | 8 | 5 | 3 | 2 | 0 | 4 | 0 | |
| 01134 | Q3-09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER | 9 | 4 | 11 | 8 | 6 | 8 | 4 | 9 | |
| 01135 | Q3-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS | 6 | 4 | 8 | 3 | 5 | 8 | 4 | 4 | |
| 01136 | Q3-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS | 7 | 4 | 8 | 5 | 6 | 8 | 6 | 4 | |
| 01137 | Q3-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS | 7 | 8 | 7 | 5 | 3 | 8 | 4 | 0 | |
| 01138 | Q3-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS | 7 | 6 | 8 | 3 | 6 | 8 | 6 | 4 | |
| 01139 | Q3-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS | 7 | 8 | 6 | 11 | 5 | 15 | 2 | 4 | |
| 01140 | R1-01 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB | 3 | 0 | 4 | 3 | 5 | 15 | 4 | 0 | PHANTASTRONS |
| 01141 | R2-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS | 19 | 15 | 16 | 29 | 33 | 54 | 31 | 26 | |
| 01142 | R2-02 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS | 12 | 4 | 11 | 18 | 25 | 31 | 25 | 22 | SCHMITT TRIGGERS |
| 01143 | R2-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS | 11 | 4 | 11 | 16 | 23 | 38 | 22 | 17 | |
| 01144 | R3-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES | 37 | 12 | 41 | 47 | 49 | 38 | 47 | 61 | |
| 01145 | R3-02 DO YOU FABRICATE COAXIAL CABLES | 51 | 35 | 53 | 58 | 61 | 62 | 61 | 61 | CABLE FABRICATION |
| 01146 | S1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS | 52 | 54 | 48 | 58 | 47 | 62 | 41 | 52 | |
| 01147 | S1-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE LIGHT DECODER SYSTEMS | 35 | 23 | 31 | 50 | 17 | 0 | 16 | 30 | |
| 01148 | S1-03 DO YOU ANALYZE NIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA | 5 | 0 | 7 | 5 | 1 | 0 | 2 | 0 | INPUT/OUTPUT DEVICES |
| 01149 | S2-01 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB | 3 | 4 | 4 | 3 | 5 | 8 | 4 | 4 | PHOTO SENSITIVE DEVICES |
| 01150 | S3-01 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS | 7 | 8 | 7 | 8 | 17 | 23 | 16 | 17 | |
| 01151 | S3-02 DO YOU MEASURE EXCITATION FREQUENCIES | 0 | 0 | 0 | 0 | 5 | 8 | 4 | 4 | |
| 01152 | S3-03 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS | 0 | 0 | 0 | 0 | 5 | 8 | 4 | 4 | SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS) |
| 01153 | S3-04 DO YOU USE OR REFER TO EXCITATION FREQUENCIES | 0 | 0 | 0 | 0 | 3 | 8 | 4 | 0 | |
| 01154 | S3-05 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS | 0 | 0 | 0 | 0 | 5 | 8 | 6 | 0 | |
| 01155 | S3-06 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION | 3 | 4 | 2 | 5 | 7 | 23 | 4 | 4 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| 51156 | S3-07 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION | 4 | 4 | 4 | 5 | 13 | 23 | 12 | 9 | |
| 51157 | S3-08 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION | 4 | 4 | 4 | 5 | 10 | 23 | 10 | 4 | |
| 51158 | S3-09 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION | 5 | 4 | 5 | 5 | 11 | 23 | 12 | 4 | |
| T1159 | T1-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS | 6 | 0 | 7 | 8 | 64 | 62 | 65 | 65 | |
| T1160 | T1-02 DO YOU INSPECT INFRARED SYSTEMS | 3 | 0 | 4 | 5 | 53 | 54 | 55 | 48 | |
| T1161 | T1-03 DO YOU CLEAN INFRARED SYSTEMS | 2 | 0 | 2 | 3 | 51 | 54 | 53 | 43 | |
| T1162 | T1-04 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS | 3 | 0 | 4 | 3 | 53 | 54 | 53 | 52 | INFRARED |
| T1163 | T1-05 DO YOU OPERATE INFRARED SYSTEMS | 3 | 0 | 2 | 5 | 53 | 38 | 57 | 52 | |
| T1164 | T1-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS | 2 | 0 | 2 | 3 | 48 | 31 | 51 | 52 | |
| T1165 | T1-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS | 3 | 0 | 4 | 5 | 53 | 38 | 57 | 52 | |
| T1166 | T1-08 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS | 2 | 0 | 4 | 0 | 40 | 38 | 39 | 43 | |
| T1167 | T1-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS | 3 | 0 | 4 | 3 | 51 | 54 | 51 | 48 | |
| T1168 | T1-10 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS | 3 | 0 | 4 | 3 | 37 | 46 | 35 | 35 | |
| T1169 | T1-11 DO YOU USE OR REFER TO FAR REGION | 0 | 0 | 0 | 0 | 23 | 15 | 25 | 22 | |
| T1170 | T1-12 DO YOU USE OR REFER TO INTERMEDIATE REGION | 0 | 0 | 0 | 0 | 22 | 15 | 24 | 22 | |
| T1171 | T1-13 DO YOU USE OR REFER TO NEAR REGION | 0 | 0 | 0 | 0 | 24 | 23 | 25 | 22 | |
| T1172 | T1-14 DO YOU USE OR REFER TO MICRON | 0 | 0 | 0 | 0 | 33 | 46 | 31 | 30 | |
| T1173 | T1-15 DO YOU USE OR REFER TO GRAY BODIES | 0 | 0 | 0 | 0 | 30 | 38 | 29 | 26 | |
| T1174 | T1-16 DO YOU USE OR REFER TO BLACK BODIES | 1 | 0 | 0 | 3 | 60 | 46 | 63 | 61 | |
| T1175 | T1-17 DO YOU USE OR REFER TO ABSORPTION | 1 | 0 | 0 | 3 | 34 | 38 | 37 | 26 | |
| T1176 | T1-18 DO YOU USE OR REFER TO SCATTERING | 1 | 0 | 0 | 3 | 24 | 31 | 22 | 26 | |
| T1177 | T1-19 DO YOU USE OR REFER TO ABSOLUTE ZERO | 0 | 0 | 0 | 0 | 47 | 38 | 51 | 43 | |
| T1178 | T1-20 DO YOU PERFORM TASKS ON BLITZ | 0 | 0 | 0 | 0 | 5 | 8 | 4 | 4 | |
| T1179 | T1-21 DO YOU PERFORM TASKS ON TARGET BUTTONS | 1 | 0 | 0 | 3 | 8 | 8 | 4 | 17 | |
| T1180 | T1-22 DO YOU PERFORM TASKS ON ERECTOR LENSES | 0 | 0 | 0 | 0 | 14 | 23 | 14 | 9 | |
| T1181 | T1-23 DO YOU PERFORM TASKS ON OCULAR LENSES | 0 | 0 | 0 | 0 | 20 | 31 | 20 | 13 | |
| T1182 | T1-24 DO YOU PERFORM TASKS ON CORRECTION LENSES | 0 | 0 | 0 | 0 | 17 | 15 | 18 | 17 | |
| T1183 | T1-25 DO YOU PERFORM TASKS ON FILTERS | 0 | 0 | 0 | 0 | 31 | 46 | 25 | 35 | |
| T1184 | T1-26 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS | 0 | 0 | 0 | 0 | 11 | 8 | 12 | 13 | |
| T1185 | T1-27 DO YOU PERFORM TASKS ON PLANE MIRRORS | 0 | 0 | 0 | 0 | 13 | 8 | 14 | 13 | |
| T1186 | T2-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | |
| T1187 | T2-02 DO YOU INSPECT LASER SYSTEMS | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | |
| T1188 | T2-03 DO YOU CLEAN LASER SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | LASERS |
| T1189 | T2-04 DO YOU OPERATE LASER SYSTEMS | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | |
| T1190 | T2-05 DO YOU OPERATE LASER SYSTEMS | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | |
| T1191 | T2-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | DY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|
| T1192 | T2-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | |
| T1193 | T2-08 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | |
| T1194 | T2-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | |
| T1195 | T2-10 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | |
| T1196 | T2-11 DO YOU USE OR REFER TO ANGSTROMS (A) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1197 | T2-12 DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1198 | T2-13 DO YOU USE OR REFER TO GROUND STATE | 1 | 0 | 0 | 3 | 1 | 0 | 0 | 4 | |
| T1199 | T2-14 DO YOU USE OR REFER TO EXCITED STATE | 1 | 0 | 0 | 3 | 1 | 0 | 0 | 4 | |
| T1200 | T2-15 DO YOU USE OR REFER TO PACKET OF RADIATION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1201 | T2-16 DO YOU USE OR REFER TO PHOTONS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1202 | T2-17 DO YOU USE OR REFER TO SPONTANEOUS EMISSION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1203 | T2-18 DO YOU USE OR REFER TO STIMULATED EMISSION | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | |
| T1204 | T2-19 DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | |
| T1205 | T2-20 DO YOU USE OR REFER TO INVERSION LEVEL | 0 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | |
| T1206 | T2-21 DO YOU USE OR REFER TO MONOCHROMATIC | 1 | 0 | 0 | 3 | 1 | 8 | 0 | 0 | |
| T1207 | T2-22 DO YOU WORK WITH ACTIVE MATERIALS | 1 | 0 | 0 | 3 | 1 | 8 | 0 | 0 | |
| T1208 | T2-23 DO YOU WORK WITH PUMPING SOURCES | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | |
| T1209 | T2-24 DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | |
| T1210 | T2-25 DO YOU WORK WITH HALF SILVERED (92% REFLECTIVE) MIRRORS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1211 | T2-26 DO YOU WORK WITH HELICAL FLASHTUBES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1212 | T2-27 DO YOU WORK WITH RUBY | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1213 | T2-28 DO YOU WORK WITH HELIUM-NEON | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | |
| T1214 | T2-29 DO YOU WORK WITH HELIUM-XENON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1215 | T2-30 DO YOU WORK WITH XENON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1216 | T2-31 DO YOU WORK WITH CESIUM-HELIUM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1217 | T2-32 DO YOU WORK WITH ARGON | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1218 | T2-33 DO YOU WORK WITH NEODYMIUM IN GLASS | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | |
| T1219 | T2-34 DO YOU WORK WITH GALLIUM ARSENIDE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| T1220 | T3-01 IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE (DVST) OR MULTIPLE MODE | 30 | 27 | 24 | 45 | 33 | 62 | 24 | 39 | |
| T1221 | T3-02 DO YOU INSPECT DVST OR MMST | 27 | 23 | 22 | 42 | 28 | 54 | 20 | 30 | |
| T1222 | T3-03 DO YOU CLEAN DVST OR MMST | 23 | 19 | 18 | 37 | 22 | 46 | 14 | 26 | |
| T1223 | T3-04 DO YOU ADJUST OR CALIBRATE DVST OR MMST | 18 | 15 | 14 | 29 | 24 | 46 | 16 | 30 | DISPLAY TUBES |
| T1224 | T3-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST | 25 | 19 | 19 | 42 | 31 | 62 | 22 | 35 | |
| T1225 | T3-06 DO YOU TROUBLESHOOT DVST OR MMST CIRCUITS | 18 | 15 | 16 | 24 | 25 | 54 | 16 | 30 | |
| T1226 | T3-07 DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS | 26 | 23 | 22 | 37 | 29 | 54 | 18 | 39 | |
| T1227 | T3-08 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DVST | 9 | 0 | 8 | 16 | 11 | 15 | 10 | 13 | |

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

| | | BY-TSK | SPC 030 | SPC 031 | SPC 032 | SPC 033 | SPC 034 | SPC 035 | SPC 036 | SPC 037 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T1228 | T3-09 | DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF MMST | 3 | 0 | 1 | 8 | 8 | 8 | 6 | 13 | |
| T1229 | T3-10 | DO YOU PERFORM TASKS ON FLOOD GUNS | 6 | 4 | 6 | 8 | 14 | 38 | 10 | 9 | |
| T1230 | T3-11 | DO YOU PERFORM TASKS ON WRITE GUNS | 7 | 4 | 6 | 11 | 28 | 54 | 20 | 30 | |
| T1231 | T3-12 | DO YOU PERFORM TASKS ON ATTACK GUNS | 2 | 0 | 2 | 3 | 6 | 31 | 2 | 0 | |
| T1232 | T3-13 | DO YOU PERFORM TASKS ON ERASE GUNS | 4 | 0 | 5 | 5 | 26 | 54 | 20 | 26 | |
| T1233 | T3-14 | DO YOU PERFORM TASKS ON STORAGE GRIDS | 2 | 0 | 2 | 3 | 23 | 54 | 18 | 17 | |
| U1234 | U1-01 | IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING TASKS | 30 | 27 | 34 | 24 | 33 | 46 | 29 | 35 | |
| U1235 | U1-02 | DO YOU USE OR REFER TO DECIMAL SYSTEMS | 16 | 19 | 17 | 11 | 18 | 31 | 18 | 13 | PROGRAMMING |
| U1236 | U1-03 | DO YOU USE OR REFER TO PROGRAMS | 30 | 27 | 34 | 24 | 22 | 38 | 18 | 22 | |
| U1237 | U1-04 | DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS | 26 | 27 | 29 | 18 | 9 | 15 | 8 | 9 | |
| U1238 | U1-05 | DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS | 6 | 8 | 7 | 3 | 9 | 15 | 8 | 9 | |
| U1239 | U1-06 | DO YOU USE OR REFER TO FOUR SYSTEMS | 1 | 4 | 1 | 0 | 6 | 8 | 4 | 9 | |
| U1240 | U1-07 | DO YOU USE OR REFER TO BINARY SYSTEMS | 22 | 23 | 25 | 13 | 15 | 23 | 10 | 22 | |
| U1241 | U1-08 | DO YOU USE OR REFER TO TIME-SHARING | 14 | 19 | 12 | 16 | 16 | 31 | 12 | 17 | |
| U1242 | U1-09 | DO YOU USE OR REFER TO DATA WORDS | 29 | 31 | 30 | 24 | 21 | 23 | 18 | 26 | |
| U1243 | U1-10 | DO YOU USE OR REFER TO ADDRESS WORDS | 31 | 31 | 34 | 26 | 21 | 31 | 14 | 30 | |
| U1244 | U1-11 | DO YOU USE OR REFER TO ADDRESS/SUBADDRESS | 24 | 27 | 22 | 26 | 20 | 31 | 16 | 22 | |
| U1245 | U1-12 | DO YOU USE OR REFER TO STEERING/INFORMATION | 18 | 19 | 13 | 18 | 14 | 15 | 12 | 17 | |
| U1246 | U1-13 | DO YOU USE OR REFER TO INFORMATION WORDS | 28 | 27 | 29 | 26 | 18 | 31 | 12 | 26 | |
| U1247 | U1-14 | DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING | 10 | 12 | 10 | 8 | 14 | 31 | 8 | 17 | |
| U1248 | U1-15 | DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING | 8 | 8 | 8 | 8 | 9 | 23 | 8 | 4 | |
| U1249 | U1-16 | DO YOU PERFORM TASKS ON INPUT DEVICES | 13 | 15 | 12 | 13 | 5 | 8 | 4 | 4 | |
| U1250 | U1-17 | DO YOU PERFORM TASKS ON STORAGE DEVICES | 12 | 12 | 12 | 11 | 2 | 0 | 2 | 4 | |
| U1251 | U1-18 | DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS | 10 | 12 | 11 | 8 | 2 | 0 | 2 | 4 | |
| U1252 | U1-19 | DO YOU PERFORM TASKS ON CONTROL SECTIONS | 14 | 19 | 13 | 13 | 5 | 8 | 4 | 4 | |
| U1253 | U1-20 | DO YOU PERFORM TASKS ON OUTPUT DEVICES | 14 | 19 | 13 | 13 | 6 | 15 | 4 | 4 | |
| U1254 | U1-21 | DO YOU PERFORM TASKS ON POWER SUPPLIES | 14 | 19 | 13 | 13 | 5 | 8 | 4 | 4 | |
| U1255 | U2-01 | DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND ATTENUATION | 48 | 38 | 48 | 53 | 80 | 69 | 84 | 78 | |
| U1256 | U2-02 | DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS | 4 | 4 | 5 | 3 | 11 | 0 | 14 | 13 | DB AND POWER RATIOS |
| U1257 | U2-03 | DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS | 4 | 4 | 5 | 3 | 11 | 0 | 12 | 17 | |

UNITED STATES AIR FORCE
JOB INVENTORY

JOB INVENTORY FOR INTEGRATED AVIONICS (326X0/X1/X2)

A MATHEMATICS, DIRECT CURRENT, VOLTAGE, AND RESISTANCE

A 1 A1-01 DO YOU USE AN INSTRUMENT, SUCH AS METER OR AN OSCILLOSCOPE, IN WHICH IT IS NECESSARY TO AMPLIFY OR ATTENUATE A VOLTAGE, RESISTANCE, ETC., BY POWERS OF 10.
A 2 A1-02 DO YOU USE A PUBLICATION, SUCH AS A TECHNICAL ORDER OR MAINTENANCE MANUAL, IN WHICH IT IS NECESSARY FOR YOU TO MULTIPLY OR DIVIDE BY A POWER OF 10 BEFORE YOU CAN APPLY THE INFORMATION FROM THE PUBLICATION IN A USEFUL WAY ON THE JOB.
A 3 A1-03 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS.
A 4 A1-04 DO YOU FIND THE SQUARE ROOT OF A QUANTITY.
A 5 A1-05 DO YOU SOLVE FOR AN UNKNOWN QUANTITY.
A 6 A1-06 DO YOU CONVERT NUMBERS TO LOGARITHMS.
A 7 A1-07 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS.
A 8 A1-08 DO YOU SOLVE QUADRATIC EQUATIONS.
A 9 A1-09 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS (THIS IS THE LOGARITHM SYSTEM WHICH USES THE NUMBER 2.718 AS A BASE).
A 10 A1-10 DO YOU WORK WITH VECTOR QUANTITIES, SUCH AS ADDING OR SUBTRACTING TWO VECTORS.
A 11 A1-11 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT.
A 12 A1-12 DO YOU DETERMINE AREAS OF PLANE FIGURES, SUCH AS AREAS OF CIRCLES OR TRIANGLES.
A 13 A1-13 DO YOU SOLVE OR USE SIMULTANEOUS EQUATIONS.
A 14 A1-14 DO YOU SOLVE OR USE PROPORTIONS.
A 15 A2-01 DO YOU USE THE TERM VOLTAGE OR VOLT.
A 16 A2-02 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF).
A 17 A2-03 DO YOU USE THE TERM OHM.
A 18 A2-04 DO YOU USE THE TERM ION.
A 19 A2-05 DO YOU USE THE TERM DYNE.
A 20 A2-06 DO YOU USE THE TERM AMPERE.
A 21 A2-07 DO YOU USE THE TERM NEUTRON.
A 22 A2-08 DO YOU USE THE TERM COULOMB.
A 23 A2-09 DO YOU USE THE TERM PROTON.
A 24 A3-01 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB.
A 25 A3-02 DO YOU INSPECT RESISTORS.
A 26 A3-03 DO YOU CLEAN RESISTORS.
A 27 A3-04 DO YOU ADJUST RESISTORS.
A 28 A3-05 DO YOU CHECK OHMIC VALUE OF RESISTORS.
A 29 A3-06 DO YOU REMOVE OR REPLACE RESISTORS.
A 30 A3-07 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS IN YOUR PRESENT JOB.
A 31 A3-08 DO YOU USE OR REFER TO RESISTOR SYMBOLS, SUCH AS FOR FIXED RESISTORS OR FOR TAPPED RESISTORS.
A 32 A3-09 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FIXED WIRE, SLIDE TAP, RHEOSTAT OR POTENTIOMETER.
A 33 A3-10 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE OHMIC VALUE OF RESISTANCE.
A 34 A3-11 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE TOLERANCE OF RESISTORS.
A 35 A3-12 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE FAILURE RATE OF RESISTORS.
A 36 A3-13 DO YOU MAKE DECISIONS IN WHICH YOU MUST DETERMINE HOW TWO OR MORE BATTERIES MUST BE CONNECTED TOGETHER TO ACHIEVE A SPECIFIC VOLTAGE.
A 37 A3-14 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT ANY OF THE FOLLOWING COMPONENTS: BATTERY, FUSE, CONDUCTOR, LAMP OR SWITCH.
A 38 A3-15 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS.
A 39 A3-16 DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS.
A 40 A3-17 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS.
A 41 A3-18 DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS.
A 42 A3-19 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS.
A 43 A3-20 DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS.
A 44 A3-21 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS.
A 45 A3-22 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS.
A 46 A3-23 DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS.
A 47 A3-24 DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS.
A 48 A3-25 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS.
A 49 A3-26 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS.
A 50 A3-27 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS.
A 51 A3-28 DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS.

B MULTIMETER USES, ALTERNATING CURRENT, INDUCTORS, AND INDUCTIVE

B 52 B1-01 DO YOU MEASURE RESISTANCE.
B 53 B1-02 DO YOU REPAIR AN OHMMETER.
B 54 B1-03 DO YOU MEASURE VOLTAGE.
B 55 B1-04 DO YOU REPAIR A VOLTMETER.
B 56 B1-05 DO YOU REPAIR AN AMMETER.
B 57 B1-06 DO YOU MEASURE CURRENT.
B 58 B1-07 DO YOU USE A MULTIMETER.
B 59 B1-08 DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB.
B 60 B1-09 DO YOU READ SCHEMATICS.
B 61 B2-01 DO YOU USE OR REFER THE TERM EFFECTIVE VOLTAGE (RMS).
B 62 B2-02 DO YOU USE OR REFER THE TERM PEAK TO PEAK VOLTAGE.
B 63 B2-03 DO YOU USE OR REFER THE TERM AVERAGE VOLTAGE (DC).
B 64 B2-04 DO YOU USE OR REFER THE TERM WAVE LENGTH.
B 65 B2-05 DO YOU USE OR REFER THE TERM FREQUENCY.
B 66 B2-06 DO YOU USE OR REFER THE TERM INSTANTANEOUS VALUE.
B 67 B3-01 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB.
B 68 B3-02 DO YOU INSPECT INDUCTORS.
B 69 B3-03 DO YOU CLEAN INDUCTORS.
B 70 B3-04 DO YOU ADJUST INDUCTORS.
B 71 B3-05 DO YOU REMOVE OR REPLACE INDUCTORS.
B 72 B3-06 DO YOU USE OR REFER TO INDUCTANCE.
B 73 B3-07 DO YOU USE OR REFER TO HENRIES.
B 74 B3-08 DO YOU USE OR REFER TO INDUCTIVE REACTANCE.
B 75 B3-09 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS.
B 76 B3-10 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS.
B 77 B3-11 DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS.
B 78 B3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE NUMBER OF TURNS OF THE COIL.
B 79 B3-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE CROSS SECTIONAL AREA OF THE CORE.
B 80 B3-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO ITS LENGTH.
B 81 B3-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE PERMEABILITY OF THE CORE MATERIAL.
B 82 B3-16 DO YOU CALCULATE INDUCTANCE FOR A PARTICULAR INDUCTOR USING FORMULAS.
B 83 B3-17 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES.
B 84 B3-18 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL.
B 85 B3-19 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES-PARALLEL CIRCUITS.
B 86 B3-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS.
B 87 B3-21 DO YOU CALCULATE INDUCTIVE REACTANCE.
B 88 B3-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO FREQUENCY.
B 89 B3-23 DO YOU WORK WITH POWER INDUCTORS.
B 90 B3-24 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS.
B 91 B3-25 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS.

C CAPACITORS, CAPACITIVE REACTANCE, TRANSFORMERS, AND MAGNETISM

C 92 C1-01 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS ON YOUR PRESENT JOB.
C 93 C1-02 DO YOU INSPECT CAPACITORS.
C 94 C1-03 DO YOU CLEAN CAPACITORS.
C 95 C1-04 DO YOU ADJUST CAPACITORS.
C 96 C1-05 DO YOU TEST CAPACITORS.
C 97 C1-06 DO YOU DISCHARGE CAPACITORS.
C 98 C1-07 DO YOU REMOVE OR REPLACE CAPACITORS.
C 99 C1-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.
C100 C1-09 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC.
C101 C1-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS.
C102 C1-11 DO YOU USE OR REFER TO CAPACITANCE.
C103 C1-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT.
C104 C1-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS.
C105 C1-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE.
C106 C1-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES.
C107 C1-16 THE CAPACITORS YOU WORK WITH IN DC CIRCUITS.
C108 C1-17 THE CAPACITORS YOU WORK WITH ARE IN AC CIRCUITS.
C109 C1-18 THE CAPACITORS YOU WORK WITH ARE IN CIRCUITS WITH BOTH DC AND AC.
C110 C1-19 THE CAPACITORS YOU WORK WITH ARE DON'T REMEMBER WHICH CIRCUITS.
C111 C1-20 DO YOU CALCULATE CAPACITANCE FOR A PARTICULAR CAPACITOR USING FORMULAS.
C112 C1-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL TO THE DIELECTRIC CONSTANT.
C113 C1-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL TO THE DIELECTRIC THICKNESS.
C114 C1-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES.
C115 C1-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF

CAPACITORS IN PARALLEL.
C116 C1-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS.
C117 C1-26 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY APPEARS TO DO SO.
C118 C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS.
C119 C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO FREQUENCY.
C120 C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE.
C121 C1-30 DO YOU WORK WITH MOTOR-STATOR CAPACITORS (VARIABLE).
C122 C1-31 DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS.
C123 C1-32 DO YOU WORK WITH ELECTROLYTIC CAPACITORS (FIXED).
C124 C1-33 DO YOU WORK WITH PAPER CAPACITORS (FIXED).
C125 C1-34 DO YOU WORK WITH MICA CAPACITORS (FIXED).
C126 C1-35 DO YOU WORK WITH CERAMIC CAPACITORS (FIXED).
C127 C1-36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS.
C128 C2-01 DO YOU WORK WITH TRANSFORMERS ON YOUR PRESENT JOB.
C129 C2-02 DO YOU INSPECT TRANSFORMERS.
C130 C2-03 DO YOU CLEAN TRANSFORMERS.
C131 C2-04 DO YOU ADJUST TRANSFORMERS.
C132 C2-05 DO YOU TROUBLESHOOT TRANSFORMERS.
C133 C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS.
C134 C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING.
C135 C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (M).
C136 C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M.
C137 C2-10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS.
C138 C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS.
C139 C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS.
C140 C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS.
C141 C2-14 DO YOU WORK WITH AUTOTRANSFORMERS.
C142 C2-15 DO YOU WORK WITH POWER TRANSFORMERS.
C143 C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS.
C144 C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS.
C145 C2-18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMER.
C146 C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE.
C147 C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE.
C148 C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES.
C149 C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO.
C150 C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO.
C151 C2-24 DO YOU REFER TO THE BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS.
C152 C2-25 DO YOU REFER TO THE MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS.
C153 C2-26 DO YOU REFER TO THE MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS.
C154 C2-27 DO YOU REFER TO THE CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS.
C155 C2-28 DO YOU REFER TO THE AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS.
C156 C2-29 DO YOU REFER TO THE IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS.
C157 C2-30 DO YOU REFER TO THE COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS.
C158 C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING SCHEMATIC SYMBOLS.
C159 C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH.
C160 C2-33 DO YOU REFER TO OR USE THE GENERAL RULE THAT THE TURNS RATIO OF A TRANSFORMER IS EQUAL TO THE VOLTAGE RATIO.
C161 C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS.
C162 C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS.
C163 C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS.
C164 C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH 3 PHASE TRANSFORMERS.
C165 C2-38 DO YOU INSPECT 3 PHASE TRANSFORMERS.
C166 C2-39 DO YOU CLEAN OR LUBRICATE 3 PHASE TRANSFORMERS.
C167 C2-40 DO YOU ADJUST 3 PHASE TRANSFORMERS.
C168 C2-41 DO YOU TROUBLESHOOT 3 PHASE TRANSFORMERS.
C169 C2-42 DO YOU REMOVE OR REPLACE COMPLETE 3 PHASE TRANSFORMER.
C170 C2-43 DO YOU REMOVE OR REPLACE 3 PHASE TRANSFORMER PARTS, SUCH AS A WINDING.
C171 C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS.
C172 C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS.
C173 C3-03 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS.
C174 C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS.
C175 C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS.

C176 C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM.
C177 C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX.
C178 C3-08 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM.
C179 C3-09 DO YOU USE OR REFER TO THE DOMAIN THEORY OF MAGNETISM.
C180 C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION.
C181 C3-11 DO YOU USE OR REFER TO FLUX DENSITY.
C182 C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT.
C183 C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES.
C184 C3-14 DO YOU USE THE LEFT THUMB RULE TO FIND THE NORTH POLE OF A CURRENT CARRYING COIL.

## D RCL CIRCUITS, SERIES AND PARALLEL RESONANCE (TIME CONSTANTS), AND FILTERS

D185 D1-01 DO YOU WORK WITH RC, LR, OR RCL CIRCUITS ON YOUR PRESENT JOB.
D186 D1-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS.
D187 D1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS.
D188 D1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS.
D189 D1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS.
D190 D1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS.
D191 D1-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS.
D192 D1-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS.
D193 D1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN WORKING WITH RCL CIRCUITS.
D194 D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS.
D195 D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS.
D196 D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS.
D197 D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS.
D198 D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS.
D199 D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS.
D200 D1-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS.
D201 D1-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS.
D202 D1-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING WITH RCL CIRCUITS.
D203 D1-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS.
D204 D1-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS.
D205 D1-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS: SINE OF AN ANGLE = OPPOSITE SIDE DIVIDED BY HYPOTENUSE.
D206 D1-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS.
D207 D1-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS.
D208 D1-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS.
D209 D1-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS.
D210 D1-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS.
D211 D1-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS.
D212 D1-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS.
D213 D1-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS.
D214 D1-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS.
D215 D1-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS.
D216 D1-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD.
D217 D1-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW.
D218 D1-34 DO YOU CHECK CAPACITORS USING OHMMETERS.
D219 D1-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION.
D220 D1-36 DO YOU CHECK INDUCTORS USING OHMMETERS.
D221 D1-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION.
D222 D1-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT THETA=0, PF=1, AND PA=PT FOR RESONANT CIRCUITS.
D223 D1-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS.
D224 D1-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT FREQUENCY FOR SERIES RCL CIRCUITS.
D225 D1-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT FREQUENCY FOR PARALLEL RCL CIRCUITS.
D226 D1-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK CURRENT VALUE.

D227 D1-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q.
D228 D1-44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT, OR PHASE ANGLES FOR RCL CIRCUITS.
D229 D2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH, USE, OR REFER TO SERIES OR PARALLEL RESONANCE CIRCUITS OR TIME CONSTANTS.
D230 D2-02 DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS.
D231 D2-03 DO YOU WORK WITH, USE, OR REFER TO AVAILABLE VOLTAGE.
D232 D2-04 DO YOU WORK WITH, USE, OR REFER TO TRANSIENT INTERVALS.
D233 D2-05 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE (5) TIME CONSTANTS (TC).
D234 D2-06 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS.
D235 D2-07 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUITS CURRENT OR COMPONENT VOLTAGES AFTER A SPECIFIC TIME FOR RC OR LR CIRCUITS.
D236 D2-08 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE THE TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT VOLTAGES TO REACH SPECIFIC VALUES FOR RC OR LR CIRCUITS.
D237 D2-09 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND COMPONENT VOLTAGES TO REACH SPECIFIC VALUES IN A SPECIFIC TIME.
D238 D2-10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IN LR CIRCUITS REACHES ITS MINIMUM VALUE (OR ZERO) AFTER FIVE (5) TIME CONSTANTS.
D239 D3-01 DO YOU WORK WITH CIRCUITS USED AS FILTERS ON YOUR PRESENT JOB.
D240 D3-02 DO YOU INSPECT FILTER CIRCUITS.
D241 D3-03 DO YOU CLEAN FILTER CIRCUITS.
D242 D3-04 DO YOU ALIGN OR ADJUST FILTER CIRCUITS.
D243 D3-05 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT.
D244 D3-06 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF FILTER CIRCUITS.
D245 D3-07 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT.
D246 D3-08 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF FILTER CIRCUITS.
D247 D3-09 DO YOU WORK ON LOW PASS FILTERS.
D248 D3-10 DO YOU WORK ON HIGH PASS FILTERS.
D249 D3-11 DO YOU WORK ON BANDPASS FILTERS.
D251 D3-13 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF FILTER
D250 D3-12 DO YOU WORK ON BAND-REJECT FILTERS.
D252 D3-14 DO YOU WORK WITH L-SECTION FILTER CONFIGURATIONS.
D253 D3-15 DO YOU WORK WITH T-SECTION FILTER CONFIGURATIONS.
D254 D3-16 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATIONS.
D255 D3-17 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF FILTER CONFIGURATIONS.
D256 D3-18 ARE PARALLEL RESONANT CIRCUITS USED IN FILTERS YOU WORK WITH.
D257 D3-19 ARE SERIES-PARALLEL CIRCUITS USED IN FILTERS YOU WORK WITH.
D258 D3-20 ARE SERIES RESONANT CIRCUITS USED IN FILTERS YOU WORK WITH.
D259 D3-21 ARE DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT USED IN FILTERS YOU WORK WITH.
D260 D3-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC FILTERS.

E COUPLING, SOLDERING, AND RELAYS

E261 E1-01 DO YOU WORK WITH COUPLING DEVICES ON YOUR PRESENT JOB.
E262 E1-02 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH RC COUPLING.
E263 E1-03 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH IMPEDANCE COUPLING.
E264 E1-04 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH TRANSFORMER COUPLING.
E265 E1-05 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE RC COUPLING FUNCTIONS.
E266 E1-06 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE IMPEDANCE COUPLING FUNCTIONS.
E267 E1-07 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE TRANSFORMER COUPLING FUNCTIONS.
E268 E1-08 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS.
E269 E1-09 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS.
E270 E1-10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS.
E271 E1-11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS.
E272 E1-12 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUIT.
E273 E2-01 ON YOUR PRESENT JOB DO YOU PERFORM SOLDERING TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS.
E274 E2-02 DO YOU SELECT TYPE OF SOLDER TO USE.
E275 E2-03 DO YOU ADD FLUX TO CONNECTIONS.
E276 E2-04 DO YOU CLEAN CONNECTIONS USING SOLVENTS.
E277 E2-05 DO YOU STRIP INSULATION FROM WIRES.
E278 E2-06 DO YOU CONNECT OR DISCONNECT HEAT SINKS.
E279 E2-07 DO YOU BEND OR SHAPE WIRES OR LEADS.
E280 E2-08 DO YOU CUT WIRES.
E281 E2-09 DO YOU FILE OR SHAPE SOLDERING IRON TIPS.
E282 E2-10 DO YOU TIN SOLDERING IRON TIPS.

E283 E2-11 DO YOU CLEAN SOLDERING IRON TIPS.
E284 E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS.
E285 E2-13 DO YOU TIN OR PRE-TIN CONDUCTORS.
E286 E2-14 DO YOU INSPECT SOLDERED CONNECTIONS.
E287 E2-15 DO YOU DESOLDER CONNECTIONS BY HICKING.
E288 E2-16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING TOOLS.
E289 E2-17 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS.
E290 E2-18 DO YOU CRUSH COMPONENTS FOR REMOVAL.
E291 E2-19 DO YOU MAKE HARDWIRE CONNECTIONS.
E292 E2-20 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS
E293 E2-21 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS
E294 E2-22 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS
E295 E3-01 DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB
E296 E3-02 DO YOU ADJUST RELAYS
E297 E3-03 DO YOU CLEAN RELAYS
E298 E3-04 DO YOU INSPECT RELAYS
E299 E3-05 DO YOU REMOVE OR REPLACE COMPLETE RELAYS
E300 E3-06 DO YOU REMOVE OR REPLACE PARTS OF RELAYS
E301 E3-07 DO YOU TROUBLESHOOT RELAYS
E302 E3-08 DO YOU STRAIGHTEN RELAY CONTACTS
E303 E3-09 DO YOU PERFORM TASKS ON RELAY CONTACTS
E304 E3-10 DO YOU PERFORM TASKS ON RELAY CORES
E305 E3-11 DO YOU PERFORM TASKS ON RELAY COILS
E306 E3-12 DO YOU PERFORM TASKS ON RELAY ARMATURES
E307 E3-13 DO YOU PERFORM TASKS ON RELAY SPRINGS
E308 E3-14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPEN (NO) SCHEMATIC SYMBOLS FOR RELAYS
E309 E3-15 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS
E310 E3-16 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS
E311 E3-17 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS
E312 E3-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC SYMBOLS FOR RELAYS
E313 E3-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE

F MICROPHONES, SPEAKERS, AND OSCILLOSCOPES

F314 F1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES
F315 F1-02 DO YOU INSPECT MICROPHONES
F316 F1-03 DO YOU CLEAN MICROPHONES
F317 F1-04 DO YOU OPERATE MICROPHONES
F318 F1-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OF MICROPHONES
F319 F1-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS
F320 F1-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES
F321 F1-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS
F322 F1-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES
F323 F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES
F324 F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES
F325 F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES
F326 F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES
F327 F2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS
F328 F2-02 DO YOU INSPECT SPEAKERS
F329 F2-03 DO YOU CLEAN SPEAKERS
F330 F2-04 DO YOU OPERATE SPEAKERS
F331 F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OF SPEAKERS
F332 F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS
F333 F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS
F334 F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS
F335 F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES
F336 F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS
F337 F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS
F338 F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS
F339 F2-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS
F340 F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS
F341 F2-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES
F342 F3-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB
F343 F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS
F344 F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS
F345 F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS
F346 F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY
F347 F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME
F348 F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS
F349 F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES
F350 F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS
F351 F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE
F352 F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS
F353 F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE

G SEMICONDUCTOR DIODES, TRANSISTORS, AND TRANSISTOR AMPLIFIERS

G354 G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB
G355 G1-02 DO YOU INSPECT DIODES
G356 G1-03 DO YOU REMOVE OR REPLACE DIODES
G357 G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT

G358 G1-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES
G359 G1-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, TO COMPUTE FORWARD OR REVERSE BIAS RESISTANCE
G360 G1-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES
G361 G1-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES
G362 G1-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON THEIR PHYSICAL APPEARANCE
G363 G1-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW
G364 G1-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE
G365 G1-12 DO YOU USE OR REFER TO DIODE COLOR CODING
G366 G1-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS
G367 G1-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS
G368 G1-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN 538
G369 G1-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT
G370 G1-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT
G371 G1-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE
G372 G1-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT
G373 G1-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON
G374 G1-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON
G375 G1-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL)
G376 G1-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM)
G377 G1-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END
G378 G1-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON
G379 G1-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE INCREASES RESISTANCE DECREASES)
G380 G1-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT CHARACTERISTIC CURVES (PERHAPS YOU DO THIS TO IDENTIFY POINTS OF STRUCTURAL BREAKDOWN OR OPERATING REGIONS)
G381 G1-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR INTERPRET CIRCUIT DIAGRAMS
G382 G1-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS
G383 G1-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS
G384 G1-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS
G385 G1-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS
G386 G1-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS
G387 G1-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS
G388 G1-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS
G389 G1-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS
G390 G1-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL
G391 G1-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL
G392 G1-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS
G393 G1-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS
G394 G1-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS
G395 G1-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS
G396 G1-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL
G397 G1-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES
G398 G1-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS
G399 G1-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION
G400 G1-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS
G401 G1-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS
G402 G1-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS
G403 G1-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS
G404 G2-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.
G405 G2-02 DO YOU INSPECT TRANSISTORS
G406 G2-03 DO YOU REMOVE OR REPLACE TRANSISTORS
G407 G2-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT
G408 G2-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS
G409 G2-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS
G410 G2-07 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC)

RESISTANCE MEASUREMENTS
G411 G2-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION
G412 G2-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION
G413 G2-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER)
G414 G2-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR
G415 G2-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS
G416 G2-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC
G417 G2-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION
G418 G2-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IB IS NORMALLY SIGNIFICANTLY SMALLER THAN THE EMITTER CURRENT IE (USUALLY IB BEING 2 TO 8 PERCENT OF IE)
G419 G2-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR TRANSISTORS
G420 G2-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (ICBO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES
G421 G2-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES
G422 G2-19 DO YOU USE OR REFER TO BETA TRANSISTOR GAINS
G423 G2-20 DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS
G424 G2-21 DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS
G425 G2-22 DO YOU CALCULATE BETA TRANSISTOR GAINS
G426 G2-23 DO YOU CALCULATE ALPHA TRANSISTOR GAINS
G427 G2-24 DO YOU CALCULATE GAMMA TRANSISTOR GAINS
G428 G3-01 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB
G429 G3-02 DO YOU INSPECT TRANSISTOR AMPLIFIERS
G430 G3-03 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS
G431 G3-04 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL
G432 G3-05 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS
G433 G3-06 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER
G434 G3-07 DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS
G435 G3-08 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE CURRENT
G436 G3-09 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT
G437 G3-10 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE CURRENT
G438 G3-11 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT
G439 G3-12 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL
G440 G3-13 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN BASE CURRENT WHICH RESULTS FROM A SPECIFIC INPUT SIGNAL
G441 G3-14 DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A LOAD-LINE ON A TRANSISTOR CHARACTERISTIC CURVE)
G442 G3-15 DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR
G443 G3-16 DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR
G444 G3-17 DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION
G445 G3-18 DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION
G446 G3-19 DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION
G447 G3-20 DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE-EMITTER VOLTAGE INTO THE CHANGE THE BASE COLLECTOR VOLTAGE TO DETERMINE THE VOLTAGE GAIN
G448 G3-21 DO YOU CALCULATE THE CURRENT GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE CURRENT INTO THE CHANGE IN COLLECTOR CURRENT TO DETERMINE THE CURRENT GAIN
G449 G3-22 DO YOU CALCULATE THE POWER GAIN FOR A SPECIFIC TRANSISTOR USING A FORMULA THAT IS, DO YOU MULTIPLY THE CURRENT GAIN TIMES THE VOLTAGE GAIN TO DETERMINE THE POWER GAIN
G450 G3-23 DO YOU NEED TO KNOW THAT MORE COLLECTOR CURRENT IS GENERATED WITH LESS COLLECTOR VOLTAGE AS TEMPERATURE INCREASES (THIS AFFECTS THE STATIC OPERATING POINT [Q] OF THE TRANSISTOR)
G451 G3-24 DO YOU COMPUTE THE STATIC OPERATING POINT [Q] OF A TRANSISTOR AT DIFFERENT TEMPERATURES
G452 G3-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH EMITTER (SWAMPING) RESISTOR STABILIZATION
G453 G3-26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF-BIAS STABILIZATION
G454 G3-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH THERMISTOR STABILIZATION
G455 G3-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH FORWARD BIAS DIODE STABILIZATION
G456 G3-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH REVERSE BIAS DIODE STABILIZATION

G457 G3-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH DOUBLE DIODE STABILIZATION
G458 G3-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER (SWAMPING) RESISTOR STABILIZATION
G459 G3-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION
G460 G3-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION
G461 G3-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION
G462 G3-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION
G463 G3-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION
G464 G3-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS
G465 G3-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION
G466 G3-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS
G467 G3-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS
G468 G3-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION
G469 G3-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION
G470 G3-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR TRANSISTOR AMPLIFIERS IN THE COMMON COLLECTOR CONFIGURATION
G471 G3-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS
G472 G3-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS
G473 G3-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS
G474 G3-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS
G475 G3-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS
G476 G3-49 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS

## H SOLID STATE SPECIAL PURPOSE DEVICES, POWER SUPPLIES, AND OSCILLATORS

H477 H1-01 DO YOU USE OR REFER TO VARACTORS
H478 H1-02 DO YOU USE OR REFER TO TUNNEL DIODES
H479 H1-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET)
H480 H1-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS
H481 H1-05 DO YOU USE OR REFER TO ZENER DIODES
H482 H1-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS
H483 H2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES
H484 H2-02 DO YOU INSPECT POWER SUPPLIES
H485 H2-03 DO YOU CLEAN POWER SUPPLIES
H486 H2-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES
H487 H2-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL
H488 H2-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS
H489 H2-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES
H490 H2-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS
H491 H2-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS
H492 H2-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS
H493 H2-11 DO YOU WORK WITH BRIDGE RECTIFIERS
H494 H2-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS
H495 H2-13 DO YOU USE OR REFER TO INPUT VOLTAGE
H496 H2-14 DO YOU USE OR REFER TO INPUT FREQUENCY
H497 H2-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE
H498 H2-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE
H499 H2-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE
H500 H2-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY
H501 H2-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE
H502 H2-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS
H503 H2-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE
H504 H2-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS
H505 H2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS
H506 H2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS
H507 H2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS
H508 H2-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS
H509 H2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS
H510 H2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY DON'T REMEMBER WHICH TYPE OF FILTER
H511 H2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER
H512 H3-01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB
H513 H3-02 DO YOU INSPECT OSCILLATORS
H514 H3-03 DO YOU ALIGN OR ADJUST OSCILLATORS
H515 H3-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS
H516 H3-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS
H517 H3-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL
H518 H3-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS
H519 H3-08 DO YOU USE OR REFER TO FEEDBACK
H520 H3-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD)
H521 H3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY
H522 H3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY
H523 H3-12 DO YOU USE OR REFER TO DAMPING
H524 H3-13 DO YOU USE OR REFER TO REGENERATIVE FEEDBACK
H525 H3-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT

H526 H3-15 DO YOU USE OR REFER TO CRITICAL DAMPING
H527 H3-16 DO YOU USE OR REFER TO UNDER DAMPING
H528 H3-17 DO YOU USE OR REFER TO OVER DAMPING
H529 H3-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK CIRCUITS AS FDD
H530 H3-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS FDD
H531 H3-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS FDD
H532 H3-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD
H533 H3-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS
H534 H3-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS
H535 H3-24 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS
H536 H3-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS
H537 H3-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS
H538 H3-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF OSCILLATORS

## I MULTIVIBRATORS, LIMITERS, CLAMPERS, AND ELECTRON TUBES

I539 I1-01 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB
I540 I1-02 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS
I541 I1-03 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS
I542 I1-04 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS
I543 I1-05 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS
I544 I1-06 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS
I545 I1-07 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS
I546 I1-08 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING COMPONENTS
I547 I1-09 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUITS
I548 I1-10 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC NETWORKS
I549 I1-11 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN CRYSTALS
I550 I1-12 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T REMEMBER WHICH TYPE OF FDD
I551 I1-13 DO YOU WORK WITH ASTABLE MULTIVIBRATORS
I552 I1-14 DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS
I553 I1-15 DO YOU WORK WITH BISTABLE MULTIVIBRATORS
I554 I1-16 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE MULTIVIBRATORS
I555 I2-01 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB
I556 I2-02 DO YOU WORK WITH SERIES DIODE LIMITERS
I557 I2-03 DO YOU WORK WITH SHUNT DIODE LIMITERS
I558 I2-04 DO YOU WORK WITH LIMITERS WITH BIAS
I559 I2-05 DO YOU WORK WITH ZENER DIODE LIMITERS
I560 I2-06 DO YOU WORK WITH TRANSISTOR LIMITERS
I561 I2-07 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS
I562 I2-08 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS
I563 I2-09 DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS
I564 I2-10 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING CIRCUIT
I565 I3-01 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS ELECTRON TUBES
I566 I3-02 DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD
I567 I3-03 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES
I568 I3-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES
I569 I3-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES
I570 I3-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES
I571 I3-07 DO YOU USE OR REFER TO CUTOFF
I572 I3-08 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING
I573 I3-09 DO YOU USE OR REFER TO PEAK CURRENT RATING
I574 I3-10 DO YOU USE OR REFER TO TRANSIT TIME
I575 I3-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING
I576 I3-12 DO YOU USE OR REFER TO SATURATION
I577 I3-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE
I578 I3-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE RESISTANCE FOR ELECTRON TUBES
I579 I3-15 DO YOU USE OR REFER TO PLATE VOLTAGE
I580 I3-16 DO YOU USE OR REFER TO PLATE CURRENT
I581 I3-17 DO YOU USE OR REFER TO GRID VOLTAGE
I582 I3-18 DO YOU USE OR REFER TO GRID CURRENT
I583 I3-19 DO YOU USE OR REFER TO CATHODE VOLTAGE
I584 I3-20 DO YOU USE OR REFER TO CATHODE CURRENT
I585 I3-21 DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS THE RATIO OF CHANGE IN PLATE VOLTAGE TO A CHANGE IN GRID VOLTAGE)
I586 I3-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE AMPLIFICATION FACTORS
I587 I3-23 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC) AMPLIFICATION FACTORS
I588 I3-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSCONDUCTANCE (G, WHICH IS MEASURED IN MHOS)
I589 I3-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE TRANSCONDUCTANCES
I590 I3-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE
I591 I3-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE RESISTANCE
I592 I3-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE
I593 I3-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES
I594 I3-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE VOLTAGE FOR A SPECIFIED BIAS

I695 I3-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS
I696 I3-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF
I697 I3-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION
I698 I3-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN
I699 I3-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY
I700 I3-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN
I701 I3-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN
I702 I3-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN
I703 I3-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN
I704 I3-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE
I705 I3-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION
I706 I3-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS
I707 I3-43 DO YOU USE OR REFER TO THE TYPE OF MATERIAL OR THE OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE ELECTRON TUBES YOU WORK ON
I708 I3-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS

## J ELECTRON TUBE AMPLIFIERS AND CIRCUITS, SPECIAL PURPOSE ELECTRON TUBES, HETERODYNING, MODULATION,

JA09 J1-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB
JA10 J1-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS
JA11 J1-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS
JA12 J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS
JA13 J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS
JA14 J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS
JA15 J1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER
JA16 J2-01 DO YOU WORK WITH GAS TUBES (HOT CATHODE OR COLD CATHODE)
JA17 J2-02 DO YOU WORK WITH CATHODE-RAY TUBES
JA18 J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES
JA19 J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED
JA20 J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYRATRONS
J621 J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATRONS ARE USED
J622 J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)
J623 J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)
J624 J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)
J625 J2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS
J626 J2-11 DO YOU USE OR REFER TO AQUADAG COATINGS
J627 J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS
J628 J2-13 DO YOU USE OR REFER TO PERSISTENCE
J629 J2-14 DO YOU USE OR REFER TO DECAY TIMES
J630 J2-15 DO YOU USE OR REFER TO FLUORESCENCE
J631 J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE
J632 J3-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB
J633 J3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS
J634 J3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS
J635 J3-04 DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS
J636 J3-05 DO YOU PERFORM TASKS ON REACTANCE MODULATORS
J637 J3-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS

## K AM SYSTEMS, FM SYSTEMS, AND NUMBERING SYSTEMS

K638 K1-01 DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB
K639 K1-02 DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS
K640 K1-03 DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS
K641 K1-04 DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS
K642 K1-05 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS
K643 K1-06 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS
K644 K1-07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS
K645 K1-08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS
K646 K1-09 DO YOU PERFORM TASKS ON RF OSCILLATORS
K647 K1-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS
K648 K1-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS
K649 K1-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS
K650 K1-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS
K651 K1-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS
K652 K1-15 DO YOU PERFORM TASKS ON DETECTORS
K653 K1-16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE
K654 K1-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS
K655 K1-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS

K456 K1-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS
K457 K1-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS
K458 K1-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION
K459 K1-22 DO YOU USE OR REFER TO BANDPASS DISTORTION
K460 K1-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION
K461 K1-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE
K462 K1-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS
K463 K1-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR IMAGE REJECTION RATIOS
K464 K1-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM TRANSMITTER SCHEMATIC DIAGRAMS
K465 K1-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM RECEIVER SCHEMATIC DIAGRAMS
K466 K2-01 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB
K467 K2-02 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS
K468 K2-03 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS
K469 K2-04 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS
K470 K2-05 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS
K471 K2-06 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS
K472 K2-07 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS
K473 K2-08 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS
K474 K2-09 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS
K475 K2-10 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS
K476 K2-11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)
K477 K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS
K478 K2-13 DO YOU PERFORM TASKS ON RF AMPLIFIERS
K479 K2-14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS
K480 K2-15 DO YOU PERFORM TASKS ON IF AMPLIFIERS
K481 K2-16 DO YOU PERFORM TASKS ON LIMITERS
K482 K2-17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS
K483 K2-18 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS
K484 K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS
K485 K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS
K486 K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS
K487 K3-03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS
K488 K3-04 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS
K489 K3-05 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS
K490 K3-06 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS
K491 K3-07 DO YOU ADD BINARY NUMBERS TO GET A SUM
K492 K3-08 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD
K493 K3-09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD
K494 K3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM

## L LOGIC FUNCTIONS, BOOLEAN EQUATIONS, AND COUNTERS

L695 L1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS
L696 L1-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES
L697 L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES
L698 L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS
L699 L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES
L700 L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES
L701 K1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES
L702 K1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS
L703 L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS
L704 L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES
L705 L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES
L706 L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES
L707 L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES
L708 L2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC CIRCUITS
L709 L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS
L710 L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS
L711 L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS
L712 L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES
L713 L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS
L714 L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA
L715 L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES
L716 L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS
L717 L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE
L718 L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS
L719 L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER

LOGIC DIAGRAMS
L720 L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS
L721 L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS
L722 L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS
L723 L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS
L724 L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS
L725 L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS
L726 L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES
L727 L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS
L728 L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS
L729 L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS
L730 L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS
L731 L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS
L732 L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS
L733 L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB
L734 L3-02 DO YOU USE OR REFER TO UP-COUNTERS
L735 L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS
L736 L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS
L737 L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS
L738 L3-06 DO YOU USE OR REFER TO RING COUNTERS
L739 L3-07 DO YOU USE OR REFER TO DECADE COUNTERS
L740 L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS
L741 L3-09 DO YOU USE OR REFER TO DOWN CLOCKS
L742 L3-10 DO YOU USE OR REFER TO UP CLOCKS
L743 L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS
L744 L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS
L745 L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS
L746 L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS
L747 L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER
L748 L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS
L749 L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS
L750 L3-18 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS
L751 L3-19 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS
L752 L3-20 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTERS
L753 L3-21 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS
L754 L3-22 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS
L755 L3-23 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES
L756 L3-24 DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT

M TIMING CIRCUITS, USE OF SIGNAL GENERATORS, MOTORS, AND GENERATORS

M757 M1-01 DO YOU WORK WITH SAWTOOTH WAVE GENERATORS
M758 M1-02 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS
M759 M1-03 DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK
M760 M1-04 DO YOU WORK WITH PULSED OSCILLATORS WITHOUT REGENERATIVE FEEDBACK
M761 M1-05 DO YOU WORK WITH BLOCKING OSCILLATORS
M762 M1-06 DO YOU USE OR REFER TO RISE TIME
M763 M1-07 DO YOU USE OR REFER TO FALL OR FLYBACK TIME
M764 M1-08 DO YOU USE OR REFER TO SWEEP TIME
M765 M1-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS
M766 M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS
M767 M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS
M768 M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS
M769 M2-01 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB
M770 M2-02 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS
M771 M2-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL GENERATORS
M772 M2-04 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS
M773 M2-05 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS
M774 M2-06 DO YOU USE AUDIO SINE-WAVE GENERATORS
M775 M2-07 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE
M776 M2-08 DO YOU USE RF GENERATORS LESS THAN 1,000 MH
M777 M2-09 DO YOU USE RF GENERATORS GREATER THAN 1,000 MH
M778 M2-10 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS
M779 M3-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING

WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR GENERATORS
M780 M3-02 DO YOU INSPECT MOTORS
M781 M3-03 DO YOU CLEAN OR LUBRICATE MOTORS
M782 M3-04 DO YOU OPERATE MOTORS
M783 M3-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS
M784 M3-06 DO YOU REMOVE OR REPLACE MOTOR PARTS
M785 M3-07 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS
M786 M3-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS
M787 M3-09 DO YOU PERFORM ANY TASKS ON FIELD COILS
M788 M3-10 DO YOU PERFORM ANY TASKS ON ARMATURES
M789 M3-11 DO YOU PERFORM ANY TASKS ON ROTORS
M790 M3-12 DO YOU PERFORM ANY TASKS ON BRUSHES
M791 M3-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS
M792 M3-14 DO YOU PERFORM ANY TASKS ON COMMUTATORS
M793 M3-15 DO YOU PERFORM ANY TASKS ON POLE PIECES
M794 M3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR
M795 M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR
M796 M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS
M797 M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS
M798 M3-20 DO YOU WORK WITH INDUCTION MOTORS
M799 M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS
M800 M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS
M801 M3-23 DO YOU INSPECT GENERATORS
M802 M3-24 DO YOU CLEAN OR LUBRICATE GENERATORS
M803 M3-25 DO YOU OPERATE GENERATORS
M804 M3-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS
M805 M3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS
M806 M3-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS
M807 M3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS

## METER MOVEMENTS, SATURABLE REACTORS, MAGNETIC AMPLIFIERS, AND WAVESHAPING CIRCUITS

M808 N1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB
M809 N1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS
M810 N1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS
M811 N1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS
M812 N1-05 DO YOU READ METER SCALES
M813 N1-06 DO YOU EXTEND THE RANGE OF AMMETERS
M814 N1-07 DO YOU ZERO OHMMETERS
M815 N1-08 DO YOU ZERO AMMETERS
M816 N1-09 DO YOU EXTEND THE RANGE OF VOLTMETERS
M817 N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)
M818 N2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB
M819 N2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS
M820 N2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS
M821 N2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS
M822 N2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS
M823 N2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS
M824 N2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS
M825 N2-08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS
M826 N2-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE REACTORS
M827 N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE REACTORS
M828 N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS
M829 N2-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE REACTORS
M830 N2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN SATURABLE REACTORS
M831 N2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE REACTORS
M832 N2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN SATURABLE REACTORS
M833 N2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS
M834 N3-01 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT JOB
M835 N3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS
M836 N3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW)
M837 N3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)
M838 N3-05 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)
M839 N3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS
M840 N3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS
M841 N3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT
M842 N3-09 DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT AND OUTPUT CONFIGURATION
M843 N3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS
M844 N3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS

0 SINGLE SIDEBAND SYSTEMS, PULSE MODULATION SYSTEMS, AND ANTENNAS

0845 01-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR PRESENT JOB
0846 01-02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS
0847 01-03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS
0848 01-04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS
0849 01-05 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE SYSTEMS
0850 01-06 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE COMPONENTS
0851 01-07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE SYSTEMS
0852 01-08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE COMPONENTS
0853 01-09 DO YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS
0854 01-10 DO YOU PERFORM TASKS ON SSB BALANCED MODULATORS
0855 01-11 DO YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS
0856 01-12 DO YOU PERFORM TASKS ON SSB LC FILTERS
0857 01-13 DO YOU PERFORM TASKS ON SSB CRYSTAL FILTERS
0858 01-14 DO YOU PERFORM TASKS ON SSB MECHANICAL FILTERS
0859 01-15 DO YOU PERFORM TASKS ON SSB OSCILLATORS
0860 01-16 DO YOU PERFORM TASKS ON SSB MIXERS
0861 01-17 DO YOU PERFORM TASKS ON SSB DRIVERS
0862 01-18 DO YOU PERFORM TASKS ON SSB POWER AMPLIFIERS
0863 01-19 DO YOU PERFORM TASKS ON SSB RF AMPLIFIERS
0864 01-20 DO YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS
0865 01-21 DO YOU PERFORM TASKS ON SSB IF AMPLIFIERS
0866 01-22 DO YOU PERFORM TASKS ON SSB DEMODULATORS
0867 01-23 DO YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB SYSTEM STAGES
0868 01-24 DO YOU USE OR REFER TO SELECTIVE FADING
0869 01-25 DO YOU USE OR REFER TO PEAK POWER
0870 01-26 DO YOU USE OR REFER TO FREQUENCY STABILITY
0871 01-27 DO YOU USE OR REFER TO RESPONSE CURVES FOR BANDWIDTH FILTERS
0872 01-28 DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB TRANSMITTERS
0873 01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB TRANSMITTER SCHEMATIC DIAGRAMS
0874 01-30 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB RECEIVER SCHEMATIC DIAGRAMS
0875 02-01 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JOB
0876 02-02 DO YOU INSPECT PULSE MODULATION SYSTEMS
0877 02-03 DO YOU CLEAN PULSE MODULATION SYSTEMS
0878 02-04 DO YOU ALIGN PULSE MODULATION SYSTEMS
0879 02-05 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS
0880 02-06 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM COMPONENTS
0881 02-07 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS
0882 02-08 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM COMPONENTS
0883 02-09 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM) SYSTEMS
0884 02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM) SYSTEMS
0885 02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM) SYSTEMS
0886 02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS
0887 02-13 DO YOU WORK ON LINE PULSING MODULATION SYSTEMS
0888 02-14 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF MODULATION SYSTEM
0889 02-15 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES
0890 02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODES
0891 02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS
0892 02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMERS
0893 02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATRONS
0894 02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS
0895 02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBES
0896 02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIERS
0897 02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS
0898 02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIERS
0899 02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTORS
0900 02-26 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS
0901 02-27 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS
0902 02-28 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES
0903 02-29 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)
0904 02-30 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)
0905 02-31 DO YOU USE OR REFER TO PULSE WIDTH (PW)
0906 02-32 DO YOU USE OR REFER TO PULSE SHAPE
0907 02-33 DO YOU USE OR REFER TO PEAK POWER
0908 02-34 DO YOU USE OR REFER TO AVERAGE POWER
0909 02-35 DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)
0910 02-36 DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)

0911 02-37 DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS
0912 02-38 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS
0913 02-39 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS
0914 03-01 DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB
0915 03-02 DO YOU INSPECT ANTENNAS
0916 03-03 DO YOU CLEAN ANTENNAS
0917 03-04 DO YOU PHYSICALLY ALIGN ANTENNAS
0918 03-05 DO YOU ELECTRICALLY ALIGN ANTENNAS
0919 03-06 DO YOU TROUBLESHOOT TO ANTENNAS
0920 03-07 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS
0921 03-08 DO YOU REMOVE OR INSTALL ANTENNAS
0922 03-09 DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS
0923 03-10 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES
0924 03-11 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES
0925 03-12 DO YOU DETERMINE THE DIRECTION OF THE MAGNETIC LINES IN RELATION TO THE ELECTRIC LINES OF FORCE FOR ANTENNAS
0926 03-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE OF CORRECT LENGTH (HALF-WAVE) ACT AS INDUCTIVE LOADS TO THE GENERATOR
0927 03-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE LONGER THAN A HALF-WAVE ACT AS INDUCTIVE LOADS TO THE GENERATOR
0928 03-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE SHORTER THAN A HALF-WAVE ACT AS CAPACITIVE LOADS TO THE GENERATOR
0929 03-16 DO YOU WORK WITH HERTZ ANTENNAS
0930 03-17 DO YOU WORK WITH MARCONI ANTENNAS
0931 03-18 DO YOU WORK WITH BROADSIDE ARRAYS
0932 03-19 DO YOU WORK WITH END-FIRE ARRAYS
0933 03-20 DO YOU WORK WITH CARDIOID ARRAYS
0934 03-21 DO YOU WORK WITH COLLINEAR ARRAYS
0935 03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS
0936 03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS
0937 03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS
0938 03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS
0939 03-26 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION
0940 03-27 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD
0941 03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED
0942 03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED
0943 03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON
0944 03-31 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR SPECIFIC WAVELENGTHS
0945 03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS
0946 03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS
0947 03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS
0948 03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS
0949 03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS
0850 03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS
0851 03-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY
0852 03-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS

P TRANSMISSION LINES, WAVEGUIDES AND CAVITY RESONATORS, AND MICROWAVE AMPLIFIERS AND OSCILLATORS

P953 P1-01 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS BETWEEN RECEIVERS AND ANTENNAS, TELEPHONE LEADS, AS WELL AS HIGH VOLTAGE POWER LINES, ETC. DO NOT CONSIDER WAVEGUIDES AS TRANSMISSION LINES
P954 P1-02 DO YOU REFER TO OR USE COPPER LOSS OR I2R LOSS IN TRANSMISSION LINES
P955 P1-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES
P956 P1-04 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES
P957 P1-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES
P958 P1-06 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES
P959 P1-07 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES
P960 P1-08 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES
P961 P1-09 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES
P962 P1-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES
P963 P1-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES
P964 P1-12 DO YOU TROUBLESHOOT TRANSMISSION LINES
P965 P1-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION (OPEN, SHORTED, CAPACITIVE, INDUCTIVE)
P966 P1-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS
P967 P1-15 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS
P968 P1-16 DO YOU MEASURE STANDING WAVE RATIOS (SR) OF

TRANSMISSION LINES
P969 P1-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES
P970 P1-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH MATCHING TRANSFORMERS TO MATCH TRANSMISSION LINES TO LOADS
P971 P1-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS
P972 P1-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING
P973 P1-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA
P974 P1-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES
P975 P1-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES
P976 P1-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES
P977 P1-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES
P978 P1-2A DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES
P979 P1-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES
P980 P1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF TRANSMISSION LINES REMAIN CONSTANT, THE ELECTRICAL LENGTH INCREASES
P981 P1-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES
P982 P1-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES
P983 P1-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING
P984 P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB
P985 P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS
P986 P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS
P987 P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS
P988 P2-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS
P989 P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS
P990 P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS
P991 P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS
P992 P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES
P993 P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS
P994 P2-11 DO YOU REMOVE OR INSTALL DUMMY LOADS
P995 P2-12 DO YOU REMOVE OR INSTALL E BENDS
P996 P2-13 DO YOU REMOVE OR INSTALL H BENDS
P997 P2-14 DO YOU REMOVE OR INSTALL OTHER BENDS
P998 P2-15 DO YOU REMOVE OR INSTALL CHOKE JOINTS
P999 P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS
P000 P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS
P001 P2-18 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS
P002 P2-19 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES
P003 P2-20 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES
P004 P2-21 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES
P005 P2-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES
P006 P2-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES
P007 P2-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS
P008 P2-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS
P009 P2-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS
P010 P2-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OF .7 WAVELENGTHS OF THE OPERATING FREQUENCY
P011 P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35 USED AS AN AVERAGE
P012 P2-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF
P013 P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION
P014 P2-31 DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE DIRECTION OF PROPAGATION, DIRECTION OF "E" FIELD, OR DIRECTION OF "H" FIELD IN WAVEGUIDES
P015 P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES
P016 P2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES
P017 P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR "H" LINES IN WAVEGUIDES
P018 P2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
P019 P2-36 ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
P020 P2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
P021 P2-38 ARE APERTURES (WINDOWS OR IRISES) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
P022 P2-39 ARE DON'T REMEMBER THE KIND OF ENERGY COUPLING USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
P023 P2-40 DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA
P024 P2-41 DO YOU DETERMINE THE POSITIONING OF LOOPS IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA
P025 P2-42 DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA
P026 P2-43 ARE CHOKE JOINTS USED IN WAVEGUIDES OR CAVITY

RESONATORS YOU WORK WITH
P027 P2-44 ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
P028 P2-45 ARE DON'T REMEMBER THE KIND OF JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
P029 P2-46 DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING
P030 P2-47 DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING
P031 P2-48 DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING
P032 P2-49 DO YOU TUNE CAVITY RESONATORS USING DON'T REMEMBER THE METHOD OF TUNING
P033 P2-50 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS
P034 P3-01 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR MAGNETRONS
P035 P3-02 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE
P036 P3-03 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME
P037 P3-04 DO YOU USE OR REFER TO LEAD INDUCTANCE
P038 P3-05 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL CIRCUITRY
P039 P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION
P040 P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING
P041 P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS
P042 P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS
P043 P3-10 DO YOU WORK WITH REFLEX KLYSTRONS
P044 P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT)
P045 P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC AMPLIFIERS
P046 P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS
P047 P3-14 DO YOU WORK WITH MAGNETRONS
P048 P3-15 DO YOU INSPECT KLYSTRONS OR TWT
P049 P3-16 DO YOU CLEAN KLYSTRONS OR TWT
P050 P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY
P051 P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY
P052 P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR TWT
P053 P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT
P054 P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT
P055 P3-22 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS
P056 P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS
P057 P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS
P058 P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS
P059 P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS
P060 P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS
P061 P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS
P062 P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER
P063 P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS
P064 P3-31 DO YOU INSPECT MAGNETRONS
P065 P3-32 DO YOU CLEAN MAGNETRONS
P066 P3-33 DO YOU ADJUST MAGNETRONS
P067 P3-34 DO YOU TUNE MAGNETRONS
P068 P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS
P069 P3-36 DO YOU TROUBLESHOOT MAGNETRONS
P070 P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON
P071 P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS
P072 P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES
P073 P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES
P074 P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRIDS
P075 P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS
P076 P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS DRIFT SPACES
P077 P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER GRIDS
P078 P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER CAVITIES
P079 P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS
P080 P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES
P081 P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REPELLER (REFLECTOR) PLATES
P082 P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS
P083 P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS
P084 P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES
P085 P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS
P086 P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS
P087 P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES
P088 P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS
P089 P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS
P090 P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES
P091 P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS
P092 P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES
P093 P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELIXES
P094 P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF

TRAVELING-WAVE TUBES COLLECTORS
P095 P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF
TRAVELING-WAVE TUBES MAGNETS
P096 P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF
TRAVELING-WAVE TUBES ATTENUATORS
P097 P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE
CIRCULATORS
P098 P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL
CAVITIES
P099 P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLER
CAVITIES
P100 P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR
DIODES
P101 P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE
ISOLATORS
P102 P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-
BIAS BATTERIES
P103 P3-70 DO YOU PERFORM TASKS ON ANODES
P104 P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS
P105 P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS
P106 P3-73 DO YOU PERFORM TASKS ON HEATER LEADS
P107 P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES
P108 P3-75 DO YOU PERFORM TASKS ON CATHODES
P109 P3-76 DO YOU PERFORM TASKS ON MAGNETS

4 REGISTERS, STORAGE DEVICES, AND
DIGITAL TO ANALOG CONVERTERS

Q110 Q1-01 DO YOU USE OR REFER TO STORAGE REGISTERS
Q111 Q1-02 DO YOU USE OR REFER TO SHIFT REGISTERS
Q112 Q1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT
REGISTERS
Q113 Q1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE
REGISTERS
Q114 Q1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF
SHIFT REGISTERS
Q115 Q1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF
OTHER TYPE OF REGISTERS
Q116 Q1-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A
SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES
HAVE PASSED
Q117 Q2-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR
STORAGE DEVICES IN YOUR PRESENT JOB
Q118 Q2-02 DO YOU USE OR REFER TO DELAY LINES
Q119 Q2-03 DO YOU USE OR REFER TO MAGNETIC CORES
Q120 Q2-04 DO YOU USE OR REFER TO MAGNETIC DRUMS
Q121 Q2-05 DO YOU USE OR REFER TO MAGNETIC TAPES
Q122 Q2-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED OR
MEMORY SYSTEMS
Q123 Q2-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY
SYSTEMS
Q124 Q2-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS
Q125 Q2-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES
Q126 Q3-01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-
ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D)
CONVERTERS, OR BINARY-TO-DECIMAL READOUT CONVERTERS
Q127 Q3-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL
DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT
VOLTAGES
Q128 Q3-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE
COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A)
CONVERTERS IS DETERMINED BY ADDING THE DENOMINATORS OF THE
RESISTORS
Q129 Q3-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY
COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS
Q130 Q3-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME
ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS
Q131 Q3-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME
ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS
Q132 Q3-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE
TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS
Q133 Q3-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE
TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS
Q134 Q3-09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS
ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER
CIRCUITS
Q135 Q3-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D
CONVERTERS
Q136 Q3-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D
CONVERTERS
Q137 Q3-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D
CONVERTERS
Q138 Q3-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D
CONVERTERS
Q139 Q3-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-
DIGITAL (A/D) CONVERTERS

R PHANTASTRONS, SCHMITT TRIGGERS, AND
CABLE FABRICATION

R140 R1-01 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR
PRESENT JOB
R141 R2-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER
CIRCUITS
R142 R2-02 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER
SCHEMATIC DIAGRAMS
R143 R2-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS
R144 R3-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR
CABLES
R145 R3-02 DO YOU FABRICATE COAXIAL CABLES

S INPUT\OUTPUT DEVICES, PHOTO SENSITIVE
DEVICES, AND SYNCHRONOUS VIBRATIONS

S146 S1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS
S147 S1-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE LIGHT DECODER SYSTEMS
S148 S1-03 DO YOU ANALYZE NIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA
S149 S2-01 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB
S150 S3-01 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS
S151 S3-02 DO YOU MEASURE EXCITATION FREQUENCIES
S152 S3-03 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS
S153 S3-04 DO YOU USE OR REFER TO EXCITATION FREQUENCIES
S154 S3-05 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS
S155 S3-06 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION
S156 S3-07 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION
S157 S3-08 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION
S158 S3-09 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION

T INFRARED, LASERS, AND DISPLAY TUBES

T159 T1-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS
T160 T1-02 DO YOU INSPECT INFRARED SYSTEMS
T161 T1-03 DO YOU CLEAN INFRARED SYSTEMS
T162 T1-04 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS
T163 T1-05 DO YOU OPERATE INFRARED SYSTEMS
T164 T1-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS
T165 T1-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS
T166 T1-08 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS
T167 T1-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS
T168 T1-10 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS
T169 T1-11 DO YOU USE OR REFER TO FAR REGION
T170 T1-12 DO YOU USE OR REFER TO INTERMEDIATE REGION
T171 T1-13 DO YOU USE OR REFER TO NEAR REGION
T172 T1-14 DO YOU USE OR REFER TO MICRON
T173 T1-15 DO YOU USE OR REFER TO GRAY BODIES
T174 T1-16 DO YOU USE OR REFER TO BLACK BODIES
T175 T1-17 DO YOU USE OR REFER TO ABSORPTION
T176 T1-18 DO YOU USE OR REFER TO SCATTERING
T177 T1-19 DO YOU USE OR REFER TO ABSOLUTE ZERO
T178 T1-20 DO YOU PERFORM TASKS ON BLITZ
T179 T1-21 DO YOU PERFORM TASKS ON TARGET BUTTONS
T180 T1-22 DO YOU PERFORM TASKS ON ERECTOR LENSES
T181 T1-23 DO YOU PERFORM TASKS ON OCULAR LENSES
T182 T1-24 DO YOU PERFORM TASKS ON CORRECTION LENSES
T183 T1-25 DO YOU PERFORM TASKS ON FILTERS
T184 T1-26 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS
T185 T1-27 DO YOU PERFORM TASKS ON PLANE MIRRORS
T186 T2-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS
T187 T2-02 DO YOU INSPECT LASER SYSTEMS
T188 T2-03 DO YOU CLEAN LASER SYSTEMS
T189 T2-04 DO YOU OPERATE LASER SYSTEMS
T190 T2-05 DO YOU OPERATE LASER SYSTEMS
T191 T2-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS
T192 T2-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS
T193 T2-08 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS
T194 T2-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS
T195 T2-10 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS
T196 T2-11 DO YOU USE OR REFER TO ANGSTROMS (A)
T197 T2-12 DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS
T198 T2-13 DO YOU USE OR REFER TO GROUND STATE
T199 T2-14 DO YOU USE OR REFER TO EXCITED STATE
T200 T2-15 DO YOU USE OR REFER TO PACKET OF RADIATION
T201 T2-16 DO YOU USE OR REFER TO PHOTONS
T202 T2-17 DO YOU USE OR REFER TO SPONTANEOUS EMISSION
T203 T2-18 DO YOU USE OR REFER TO STIMULATED EMISSION
T204 T2-19 DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE
T205 T2-20 DO YOU USE OR REFER TO INVERSION LEVEL
T206 T2-21 DO YOU USE OR REFER TO MONOCHROMATIC
T207 T2-22 DO YOU WORK WITH ACTIVE MATERIALS
T208 T2-23 DO YOU WORK WITH PUMPING SOURCES
T209 T2-24 DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS
T210 T2-25 DO YOU WORK WITH HALF SILVERED (92% REFLECTIVE) MIRRORS
T211 T2-26 DO YOU WORK WITH HELICAL FLASHTUBES
T212 T2-27 DO YOU WORK WITH RUBY
T213 T2-28 DO YOU WORK WITH HELIUM-NEON
T214 T2-29 DO YOU WORK WITH HELIUM-XENON
T215 T2-30 DO YOU WORK WITH XENON
T216 T2-31 DO YOU WORK WITH CESIUM-HELIUM
T217 T2-32 DO YOU WORK WITH ARGON
T218 T2-33 DO YOU WORK WITH NEODYMIUM IN GLASS
T219 T2-34 DO YOU WORK WITH GALLIUM ARSENIDE
T220 T3-01 IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE (DVST) OR MULTIPLE MODE STORAGE TUBES (MMST)
T221 T3-02 DO YOU INSPECT DVST OR MMST
T222 T3-03 DO YOU CLEAN DVST OR MMST

T223 T3-04 DO YOU ADJUST OR CALIBRATE DVST OR MMST
T224 T3-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST
T225 T3-06 DO YOU TROUBLESHOOT DVST OR MMST CIRCUITS
T226 T3-07 DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS
T227 T3-08 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DVST
T228 T3-09 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF MMST
T229 T3-10 DO YOU PERFORM TASKS ON FLOOD GUNS
T230 T3-11 DO YOU PERFORM TASKS ON WRITE GUNS
T231 T3-12 DO YOU PERFORM TASKS ON ATTACK GUNS
T232 T3-13 DO YOU PERFORM TASKS ON ERASE GUNS
T233 T3-14 DO YOU PERFORM TASKS ON STORAGE GRIDS

U PROGRAMMING, DB AND POWER RATIOS

U234 U1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING TASKS
U235 U1-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS
U236 U1-03 DO YOU USE OR REFER TO PROGRAMS
U237 U1-04 DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS
U238 U1-05 DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS
U239 U1-06 DO YOU USE OR REFER TO FOUR SYSTEMS
U240 U1-07 DO YOU USE OR REFER TO BINARY SYSTEMS
U241 U1-08 DO YOU USE OR REFER TO TIME-SHARING
U242 U1-09 DO YOU USE OR REFER TO DATA WORDS
U243 U1-10 DO YOU USE OR REFER TO ADDRESS WORDS
U244 U1-11 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS
U245 U1-12 DO YOU USE OR REFER TO STEERING/INFORMATION
U246 U1-13 DO YOU USE OR REFER TO INFORMATION WORDS
U247 U1-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING
U248 U1-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING
U249 U1-16 DO YOU PERFORM TASKS ON INPUT DEVICES
U250 U1-17 DO YOU PERFORM TASKS ON STORAGE DEVICES
U251 U1-18 DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS
U252 U1-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS
U253 U1-20 DO YOU PERFORM TASKS ON OUTPUT DEVICES
U254 U1-21 DO YOU PERFORM TASKS ON POWER SUPPLIES
U255 U2-01 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND ATTENUATION
U256 U2-02 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS
U257 U2-03 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS

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TIME:     TOTAL: 00:00:18.928      CBSUPS:  000650524
          CPU:   00:00:03.818      I/O:  00:00:03.563
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IMAGES  READ:    3          PAGES:  121
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AD-A040 750 AIR FORCE OCCUPATIONAL MEASUREMENT CENTER LACKLAND A--ETC F/G 5/9
ELECTRONICS PRINCIPLES OCCUPATIONAL SURVEY REPORT, INTEGRATED A--ETC(U)
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# SUPPLEMENTARY

# INFORMATION

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# REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

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Basic electronics
Avionics
Electronic Equipment
Electronic technicians
Electronics
Air Force training
Teaching methods
Training

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This report summarizes the results of the administration of the Electronics Principles survey to airmen assigned to Integrated Avionics Component Specialties including 326X1C, Manual Avionics AGE Test Station Operator, 326X1D, Automatic Avionics AGE Test Station Operator; and 326X1E, Avionics AGE Operator of Internal and External Penetration Aids. The report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the specialty or career ladder.

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This specialty has the following functions:

Inspects, troubleshoots, repairs, modifies, calibrates, and certifies integrated avionic systems components at the immediate level by utilizing shop aerospace ground test equipment. Identifies and isolates malfunctions of airbourne electronic equipment. Disassembles, repairs, reassembles, aligns modifies and conducts checkout of integrated avionic components. Supervises integrated avionics component maintenance personnel.